ORDER NO. MD0601008C3

Service Manual

CD Stereo System

SA-AK240GT

Colour

(S)... Silver Type

Notes: This model's CD mechanism changer unit is CRS1. Please refer to the original Service Manual (Order No. MD0509368C0) for this mechanism.

SPECIFICATIONS

Specifications

■ AMPLIFIER SECTION

RMS Output Power	
THD 10%, both channels driven	
1 kHz	115 W per channel (3)
Total output power	230 W
PMPO	2500 W

■ FM/AM TUNER, TERMINALS SECTION

Preset station	FM 15 stations AM 15 stations
Frequency Modulation (FM)	
Frequency range	87.50 to 108.00 MHz (50 kHz steps)
Sensitivity	4.0 V (IHF)
S/N 26dB	2.2 V
Antenna terminals	75 (unbalanced)
Amplitude Modulation (AM)	
Frequency range	522 to 1629 kHz (9 kHz step) 520 to 1630 kHz (10 kHz step)
Sensitivity	
S/N 20dB (at 999 kHz)	560 V/m
Music Port input jack	
Terminal	Stereo, 3.5 mm jack
Sensitivity	100 mV, 4.7 k
Phone jack	
Terminal	Stereo, 3.5 mm jack

■ CASSETTE DECK SECTION

Track system	4 track, 2 channel
Heads	
Record/playback	Solid permalloy head
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias 100 kHz
Erasing system	AC erase 100 kHz
Tape speed	4.8 cm/s
Overall frequency response (+3, -6 dB) at DECK OUT	
NORMAL	35 Hz to 14 kHz
S/N Ratio	50 dB (A weighted)
Wow and flutter	0.18 % (WRMS)
Fast forward and rewind time	Approx. 120 seconds with C-60 cassette tape

DISC SECTION

Disc played [8 cm or 12 cm]

(1) CD-Audio (CD-DA)

(2) CD-R/RW (CD-DA, MP3, WMA formatted disc)

(3) MP3/WMA

Bit rate	
MP3, WMA	32 kbps to 320 kbps
Sampling frequency	
MP3, WMA	32 kHz, 44.1 kHz, 48 kHz
CD-DA	44.1 kHz
Decoding	16 bit linear

Digital filter	8 fs
D/A converter	MASH (1 bit DAC)
Pick up	
Wavelength	780 nm
Beam Source	Semiconductor laser
Audio output (Disc)	
Number of channels	2 (Stereo) (FL,FR)

■ GENERAL

Power supply	AC 110V, 60Hz
Power consumption (At maximum 1% THD AC 110V)	337 W
Power consumption	95 W
Power consumption in standby mode	0.21 W
Dimensions (W x H x D)	250 x 330 x 343 mm
Mass	6.6 kg
Operating temperature range	+5 to +35°C
Operating humidity range	5 to 90% RH (no condensation)

■ SYSTEM

SC-AK240 (GT-S)	Music center: SA-AK240 (GT-S) Speaker: SB-AK240 (GT-S)

For information on speaker, please refer to the original Service Manual (Order No. MD0512467A3)

Notes:

1. Specifications are subject to change without notice. Mass and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

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1. Safety Precautions

1.1. General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, ensure that all the protective devices such as insulation barriers and insulation papers shields are properly installed.
3. After servicing, check for leakage current checks to prevent from being

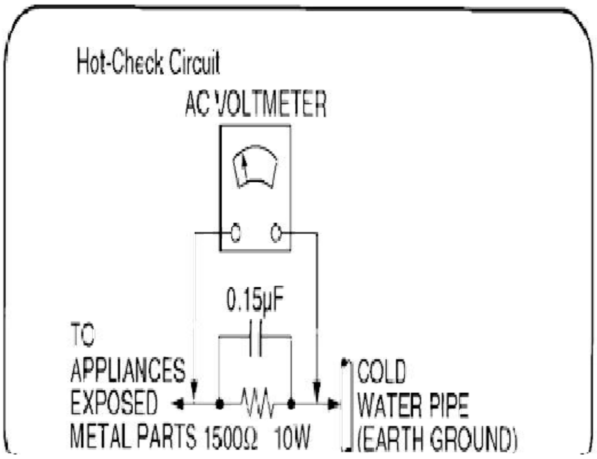
exposed to shock hazards.

1.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Using an ohmmeter measure the resistance value, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M Ω and 5.2M Ω . / When the exposed metal does

   not have a return path to the chassis, the reading must be .

Fig. 1


Hot-Check Circuit
AC VOLTMETER
0.15μF
TO APPLIANCES EXPOSED METAL PARTS
1500Ω 10W
COLD WATER PIPE (EARTH GROUND)

1.1.2. Leakage Current Hot Check (See Figure 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5k , 10 watts resistor, in parallel with a 0.15 F capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage

current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. Should the measurement is out of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

1.2. Before repair and adjustment

Disconnect AC power, discharge Power Capacitors C5101, C5104, C5171, C5172, C5920, C5940 and C5950 through a 10 Ω , 5W resistor to ground.
DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.
After repairs are completed, restore power gradually using a variac, to avoid overcurrent.
Current consumption at AC 100/110V, 50/60 Hz in NO SIGNAL mode (volume min at CD mode) should be ~500mA.

1.3. Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are
“shorted”, or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.
If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note :
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

2. Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equiped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equiped with ES devices, place the assembly on a conductive surface such as aluminium foil, to prevent electrostatic charge build up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder remover device. Some solder removal devices not classified as “anti-static (ESD protected)” can generate electrical charge to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize body motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

3. Handling Precautions For Traverse Deck

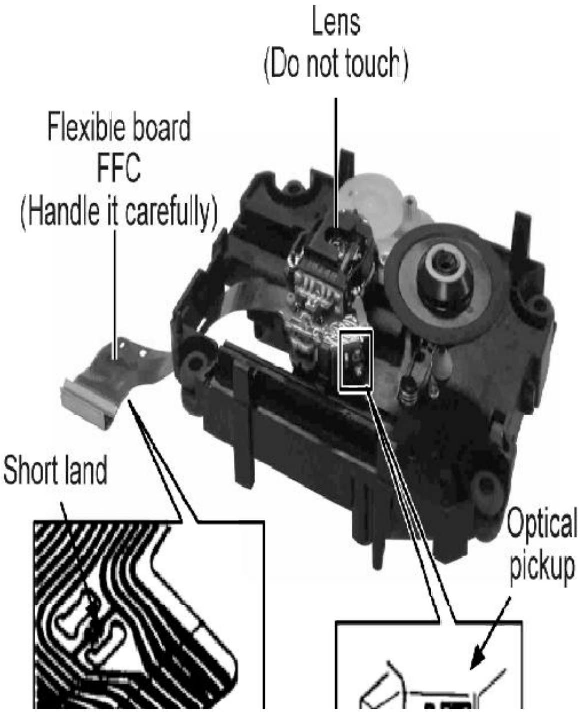
The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by the static electricity of clothes or our human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

- Way of handling the traverse deck (optical pickup)

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin

is inserted into the flexible board (FFC board).

3. **Do not to apply excessive stress to the flexible board (FFC board). When removing or connecting the short pin, finish the job in as short time as possible.**
4. **Do not turn the variable resistor for laser power adjustment. (It is pre-adjusted during production time)**



Grounding for electrostatic breakdown prevention

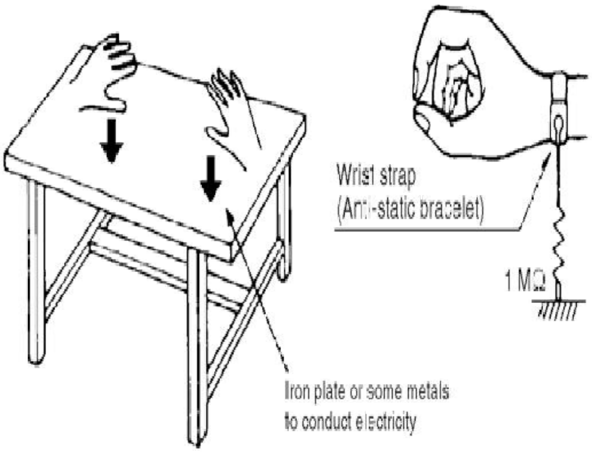
1. **Human body grounding**
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. **Work table grounding**
   Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is place, and ground the sheet.

Caution :

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).

Caution when replacing the Traverse Deck

The traverse deck has a short point shorted with solder to protect the laser diode against electrostatics breakdown. Be sure to remove the solder from the short point before making connections.



4. Precaution of Laser Diode

Caution :

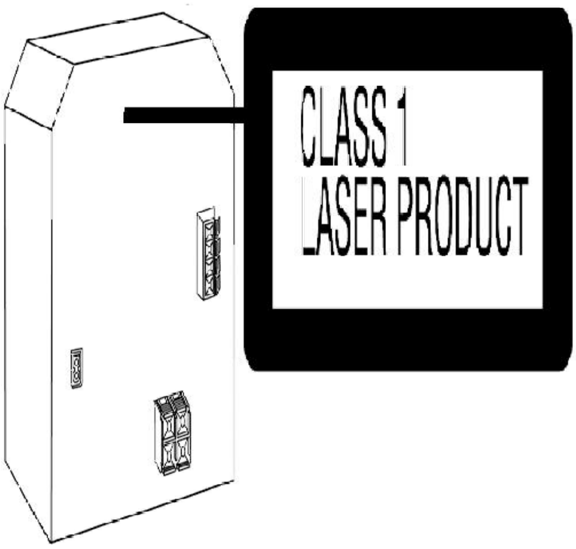
This product utilizes a laser diode with the unit turned "ON", invisible laser radiation is emitted from the pick up lens. / Wavelength : 780 nm / Maximum output radiation power from pick up : 100 W/VDE / Laser radiation from pick up unit is safety level, but be sure the followings:

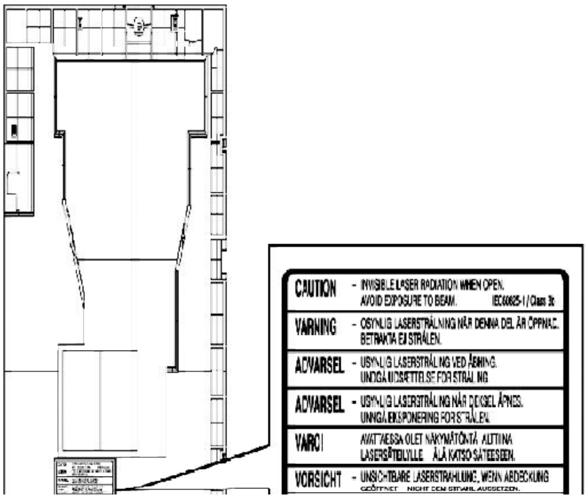
1. **Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.**
2. **Do not adjust the variable resistor on the pick up unit. It was already adjusted.**
3. **Do not look at the focus lens using optical instruments.**
4. **Recommend not to look at pick up lens for a long time.**

CAUTION!

THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Use of Caution Labels


CLASS 1
LASER PRODUCT


CAUTION - INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. IEC60825-1 / Class 3b
VARNING - OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
ADVARSEL - USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING
ADVARSEL - USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VARO! AVATTAESSA OLET NÄKYMÄTÖNTÄ ALTTIINA LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VORSICHT - UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

5. Handling the Lead-free Solder

5.1. About lead free solder (PbF)

Distinction of PbF P.C.B.:

P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

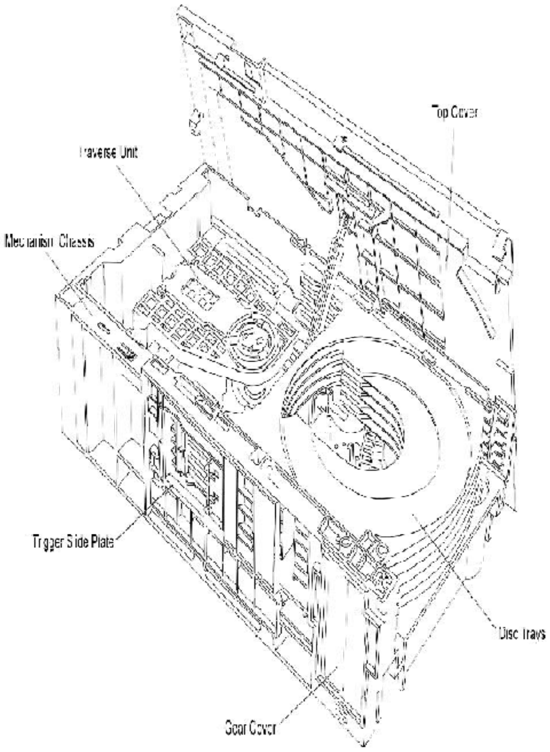
Caution:

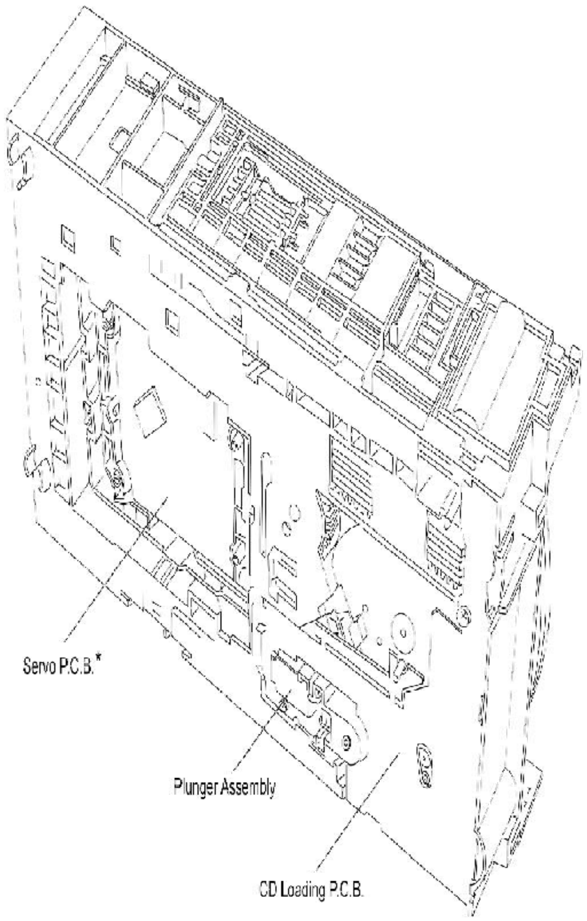
- **Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).**
- **Pb free solder will tend to splash when heated too high (about 1100°F/ 600°C).**

- **When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.**

6. New Features

6.1. CRS1 Mechanism Overview


Top Cover
Traverse Unit
Mechanism Chassis
Trigger Side Plate
Disc Trays
Gear Cover


Servo P.C.B.*
Plunger Assembly
CD Loading P.C.B.

* Illustration for CD Servo P.C.B. (Applied models: SA-AK240/340/640 series)

6.1.1. General Feature

- **This is a five disc changer mechanism for CD/DVD. The outline figure is shown below.**

- **The mechanism has "CHANGE WHILE PLAY" function. It open other trays for disc exchanging while one tray is at PLAY position performing recording or reproducing.**

- The mechanism can quickly change all trays with "CHANGE ALL" function. All trays can be move to OPEN position with one operation.
- There is no sensor to indicate presence of disc on any tray.

6.1.2. Hardware composition

- Below is the hardware components of the mechanism

Name	Function
Open Switch (OPEN-SW)	The switch is used to detect normal tray opening
	The switch is used for detect tray being manually push/trigger when full open
Home Switch (HOME-SW)	Is used to detect cam gear home position
Close Sensor (CLOSE-SENSOR)	Used for normal single tray closing
	Used to detect cam gear rotate to Play Driving position
Play Switch (PLAY-SW)	Detect TRV clamping complete position
Stocking Switch (STOCK-SW)	Detect tray completely transfer for play position to stocking position
UD Sensor (UD-SENSOR)	Detect TRV vertical movement position
Top Switch (TOP-SW)	Detect a default position of TRV vertical movement position
Driver IC	To drive Motor
Motor	Main driving source for changer
Plunger	Switching the driving source from motor to: 1. Tray open/close 2. Drive tray to play/stock position and TRV vertical movement

6.1.3. Mechanism Operation

- This mechanism has the following state:
  1. Driving of a tray to open/close
  2. Up/down operation of a traverse performs a state changes of tray. By using the plunger to lift/release of a switching gear, and the cam gear to lift/release the function gear the motor can be link to several gear trains to perform various operations.
- The functions that can be perform in this mechanism are described as below:

Condition	Explanation
Open current playing tray	The state to change current playing disc. All tray will be open at once and current tray at PLAY position will be expose.
Open All	The state where all trays being driven to OPEN position. The disc can be take in or out from tray to tray by close tray one by one from top to bottom.
Stock	The state where the trays are stored in STOCK position
Play	The state where one of the tray 5 trays is being driven to PLAY position and clamped by traverse unit
Play & Open Tray-*	The state where one of the tray is in playing position performing recording or reproducing, other trays can be used (OPEN position) for disc exchanging without stopping the recording or reproducing process.
Change	The state when one of the opened tray being driven from OPEN position to STOCK position and other opened trays remain still at OPEN position.
Close All	The state where all open trays will being driven from OPEN position to STOC position, one by one from top to bottom

6.1.4. New CD Mechanism (CRS1)

Note:

This service manual does not contain the following information for the mention CD Mechanism drive:

- **Schematic Diagram, Block Diagram and P.C.B. layout of CD Loading P.C.B.**
- **Part List for individual parts of the mechanism.**
- **Exploded View and Parts List for individual parts of the CD Mechanism drive.**

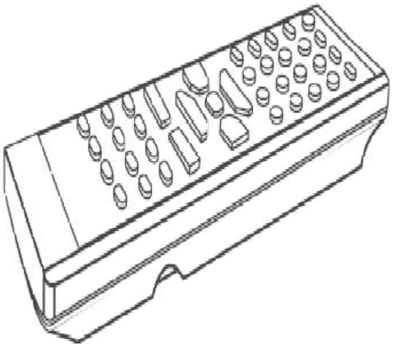
Please refer to the original service manual (Order No. MD0509368C0) for the CD Mechanism Drive CRS1.

6.2. Music Port

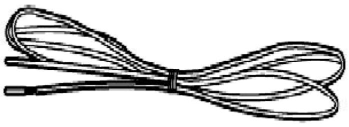
With reference to page 14 of the operating instruction manual.

7. Accessories

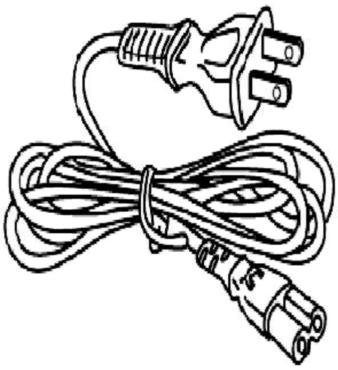
Remote Control



FM Antenna Wire



AC Cord



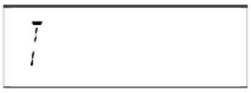
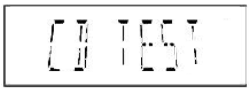
AM Loop Antenna

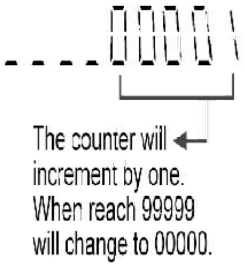
8. Operating Instructions Procedures

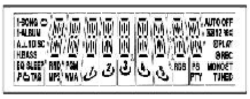
9. Self diagnosis and special mode setting

This unit is equipped with functions for checking and inspecting namely: Self-Diagnostic and Test Mode.

9.1. Special Mode Table

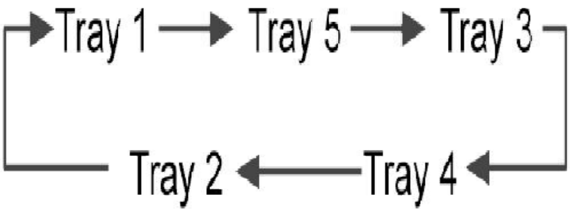
Item		FL Display	Key Operation
Mode Name	Description		Front Key
Self - Diagnostic Mode	To enter into self diagnostic checking for main unit.		1. Select [ ] for TAPE mode (Ensure no tape is inserted). 2. Press and hold [button for 3 seconds follow by [ ]. To exit, press button on main unit or remote control.
CD Test Mode	To enter into checking the reliability of changer unit.		1. Select [ ] for CD mo 2. Press and hold [button for 3 seconds follow by [ ]. To exit, press button on main unit or remote control.
CD Auto Adjustment	To check the CD auto adjustment result for FLOCK, TLOCK and CLVS.		In CD Test Mode: 1. Press [0] button on the remote control. To exit, press button on main unit or remote control.

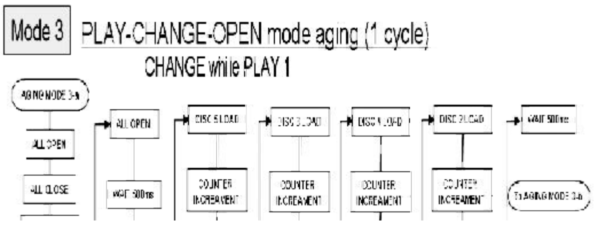
Item		FL Display	Key Operation
Mode Name	Description		Front Key
CD Changer Reliability Test (CRS1)	To determine the reliability of CD Changer Unit. (For more information, refer to section 9.1.1)	 The counter will increment by one. When reach 99999 will change to 00000.	In Self-Diagnostic Mode: 1. Select [ ] for CD mo 2. Press [button. To exit, press button on main unit or remote control. (The tray will return to PLAY position and then power off)
Doctor Mode	To enter into Doctor Mode for checking of various items and displaying EEPROM and firmware version.	1. 2. 1. All segments will light up for 1 second. 2. The Check Sum of EEPROM and firmware version will be display. * ROM correction ** Firmware version No:	In any mode: 1. Press [ ] butto on main unit follow by [4] and [7] on remote control. To exit, press [ENTER] button on remote control or button on main unit or remote control.
Cold Start	To activate cold start upon next AC power up.		In doctor mode: 1. Press [4] button on remote control. To exit, press [ENTER] button on remote control or button on main unit or remote control.
Changer Reliability Test	To check the function operation of changer unit. (For more information, refer to 9.1.1)		In doctor mode: 1. Press [DISC] on remote control. To exit, press [ENTER] button on remote control or button on main unit or remote control.

Item		FL Display	Key Operation
Mode Name	Description		Front Key
FL Display Test	To check the FL segments display (All segments will light up and LED will blink at 0.5 second interval)		**In doctor mode:** 1. Press [DIMMER] button on remote control.
Tape Eject Test	To check on the tape eject function (For deck 1/2)		**In doctor mode:** 1. Press [PROGRAM] button on remote contro

9.1.1. CD changer unit ageing test mode

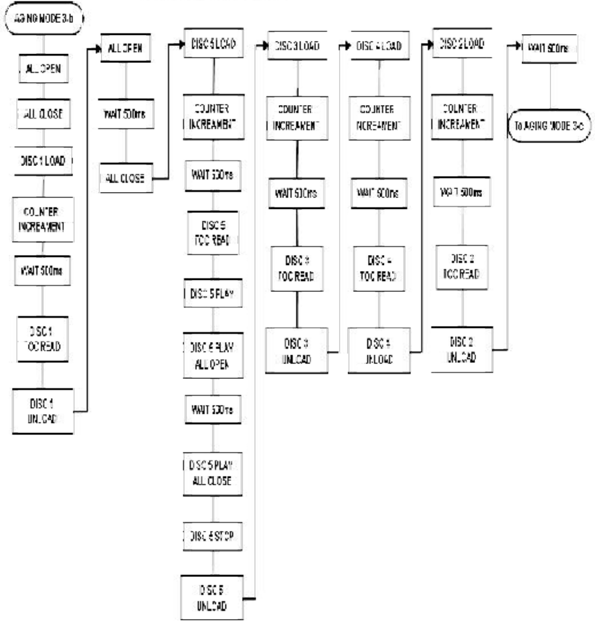
Below is the process flow chart of ageing for the CD changer unit. (CRS1)


Tray 1
Tray 5
Tray 3
Tray 4
Tray 2


Mode 3
PLAY-CHANGE-OPEN mode aging (1 cycle)
CHANGE while PLAY 1
AGING MODE 3-a
ALL OPEN
ALL CLOSE
ALL OPEN
WAIT 500ms
DISC 5 LOAD
COUNTER INCREAMENT
DISC 3 LOAD
COUNTER INCREAMENT
DISC 4 LOAD
COUNTER INCREAMENT
DISC 2 LOAD
COUNTER INCREAMENT
WAIT 500ms
To AGING MODE 3-b

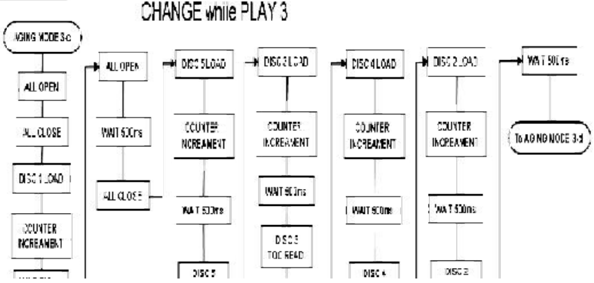
Mode 3 PLAY-CHANGE-OPEN mode aging (1 cycle)

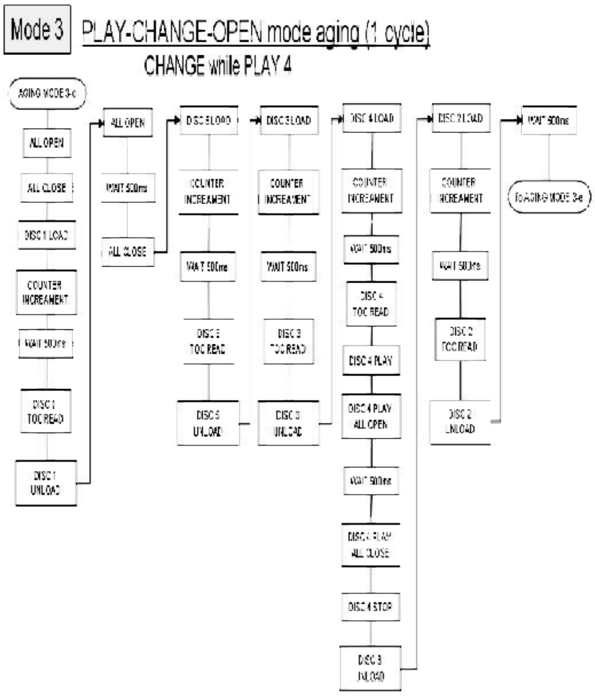
CHANGE while PLAY 5

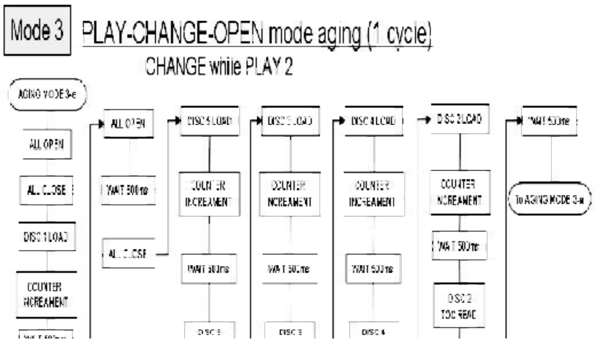

AGING MODE 3-b
ALL OPEN
ALL CLOSE
DISC 1 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 1 TOC READ
DISC 1 UNLOAD
ALL OPEN
WAIT 500ms
ALL CLOSE
DISC 5 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 5 TOC READ
DISC 5 PLAY
DISC 5 PLAY ALL OPEN
WAIT 500ms
DISC 5 PLAY ALL CLOSE
DISC 5 STOP
DISC 5 UNLOAD
DISC 3 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 3 TOC READ
DISC 3 UNLOAD
DISC 4 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 4 TOC READ
DISC 4 UNLOAD
DISC 2 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 2 TOC READ
DISC 2 UNLOAD
WAIT 500ms
To AGING MODE 3-c

Mode 3 PLAY-CHANGE-OPEN mode aging (1 cycle)

CHANGE while PLAY 3

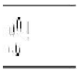
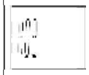
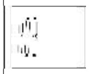
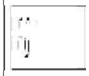
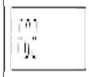
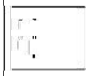

AGING MODE 3-c
ALL OPEN
ALL CLOSE
DISC 1 LOAD
COUNTER INCREAMENT
ALL OPEN
WAIT 500ms
ALL CLOSE
DISC 5 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 5
DISC 3 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 3 TOC READ
DISC 4 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 4
DISC 2 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 2
WAIT 500ms
To AGING MODE 3-d

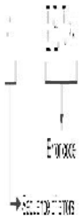
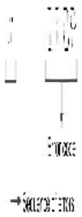

Mode 3
PLAY-CHANGE-OPEN mode aging (1 cycle)
CHANGE while PLAY 4
AGING MODE 3-c
ALL OPEN
ALL CLOSE
DISC 1 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 1 TOC READ
DISC 1 UNLOAD
ALL OPEN
WAIT 500ms
ALL CLOSE
DISC 5 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 5 TOC READ
DISC 5 UNLOAD
DISC 3 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 3 TOC READ
DISC 3 UNLOAD
DISC 4 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 4 TOC READ
DISC 4 PLAY
DISC 4 PLAY ALL OPEN
WAIT 500ms
DISC 4 PLAY ALL CLOSE
DISC 4 STOP
DISC 3 UNLOAD
DISC 2 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 2 TOC READ
DISC 2 UNLOAD
WAIT 500ms
To AGING MODE 3-e

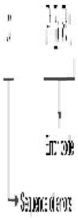
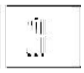
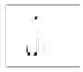
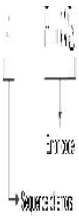

Mode 3
PLAY-CHANGE-OPEN mode aging (1 cycle)
CHANGE while PLAY 2
AGING MODE 3-e
ALL OPEN
ALL CLOSE
DISC 1 LOAD
COUNTER INCREAMENT
ALL OPEN
WAIT 500ms
ALL CLOSE
DISC 5 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 5
DISC 3 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 3
DISC 4 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 4
DISC 2 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 2 TOC READ
WAIT 500ms
To AGING MODE 3-a

9.2. Error code Table

Self-Diagnosis Function (refer Section 9.1) provides information on any problems occuring for the unit and its respective components by displaying the error codes. These error code such as U, H** and F** are stored in memory and held unless it is cleared.**
The error code is automatically display after entering into self-diagnostic mode.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
H01	Mode SW, plunger and capstan motor abnormal			For deck mechanism unit (F deck 1/2). Press [on main unit for next error.
H02	Rec INH SW abnormal			For deck mechanism unit (F deck 2). Press [on main unit for next error.
H03	HALF SW abnormal			For deck mechanism unit (F deck 1/2). Press [on main unit for next error.
F01 F02	Reel pulse abnormal TPS error		 	For deck mechanism unit (F deck 1/2). Press [on main unit for next error.
F15	RESET SW abnormal	REST SW: ON is not detected within the specified time.		For CD unit (For Traverse). Press [on main unit for next error.
F26	Transmission error between CD Servo LSI IC and microprocessor IC	When set to CD mode, the sense signal does not turn "Low", a fail safe time after system command transmission is sent.		For CD unit (For Traverse). Press [on main unit for next error.
F61	Power Amp IC output abnormal	Upon power on, PCONT=HIGH, DCDET=L after checking LSI.		For power. Press [on main unit for next error.
IHMS	Cam gear abnormality	Cam gear does not rotate to "HOME" position.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
ICSL	Cam gear/gear units abnormal	Cam gear does not rotate to "PLAY" driving position and hence does not drive playing tray to "STOCK" position.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
ISTK	Drive rack/gear assembly abnormal	The tray drive rack does not move to "STOCK" position. (Tray does not move to "STOCK" position)		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
IPLY	Drive rack/gear assembly abnormal	The tray drive rack does not move to "PLAY" position. (Tray does not move to "PLAY" position)		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
ITOP	UD assembly	UD Rack does not move to front direction. This lead to UD base not raise to top position.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
IUDS	UD assembly	After TOP SW is detected, UD rack does not move into tray 1 position.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
HOME	Cam gear/gear assembly abnormal	Cam gear does not move to "HOME" position under following conditions 1. After tray is load to "PLAY" position. 2. After tray is unload to "STOCK" position.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
LOAD	Tray drive assembly abnormal	Tray unit does not move from "STOCK" to "PLAY" position		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
PDRV	Cam gear/gear assembly abnormal	Cam gear does not move from "HOME" to "PLAY" drive position.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
UDU	UD base asssembly abnormal	UD Base assembly does not move upwards from tray 5 to tray 2		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
UDD	UD base asssembly abnormal	UD Base assembly does not move downwards from tray 1 to tray 5.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
UD1	UD base asssembly abnormal	UD Base assembly does not move to tray 1.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
F1NG	Fail - safe mode. (For open /close tray unit(s))	When the tray open operation is performed, it fails to open. It will automatically close all trays after the time-out by the microprocessor. During this time when it fails, the error code will appear.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
F2NG	Fail - safe mode. (For open /close tray unit(s))	When the tray close operation is performed, it fails to close. It will automatically open all trays after the time-out by the microprocessor. During this time when it fails, the error code will appear.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.
SRVC_TRV	To unlock the traverse unit for service	1. All trays set to "STOCK" position 2. Mechanism set to tray 5 3. Cam gear set to "HOME" position		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
RSET	Cam gear jam/ close sensor faulty	During tray re-open, the cam gear will rotate in the opposite direction to reset the cam gearposition. When it fails, the error code will appear.		For CD changer unit (CRS1) Press [SINGLE CHANGE] on main unit for next error.

CRS1 Error Code display

1. The errors that occured in CRS1 Mechanism can be recalled and displayed, in the order of the occurence under self-diagnostic (Refer to Section 9.1 for procedures to enter this mode.

    - Only the first 5 errors will be memorized (in backup memory). The subsequence error shall be ignored and not memorize.
      For system with EEPROM as memory backup,memory space in EEPROM is neccesary.

2. To display all error code memorized
   In CRS1 Self-Diagnostic mode, press [SINGLE CHANGE] to display subsequence error code.
   It shall repeat after reaching error no. 5.
   e.g.:
   [1 _ _ _ _ I H M S] [SINGLE CHANGE]
   [2 _ _ _ _ I T O P] [SINGLE CHANGE]
   [3 _ _ _ _ H O M E] [SINGLE CHANGE]
   [4 _ _ _ _ L O A D] [SINGLE CHANGE]
   [5 _ _ _ _ _ U D D] [SINGLE CHANGE]

3. To clear the error code memory
   In CRS1 Self-Diagnostic mode, long press [SINGLE CHANGE] key (2s or more)

10. Assembling and Disassembling

10.1. Caution

Special Note:
This model uses a new CD changer unit CRS1. In this following section does not contain the necessary disassembly & assembly information for the CD changer unit (CRS1) except the disasembly & assembly of traverse unit. Kindly refer to the original service manual for the CD changer unit. (Order No. MD0509368C0).

“ATTENTION SERVICER”
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. / Special reassembly procedures are described only when required.**
3. **Select items from the following index when checks or replacement are required.**
4. **Refer to the Parts No. on the page of “Parts Location and Replacement Parts List” (Section 22), if necessary.**

Warning :-

This product uses a laser diode. Refer to caution statement Precaution of Laser Diode.

Caution:
After replacing of CD Changer Unit, ageing test is necessary. Please confirm operation for CD Changer Unit.

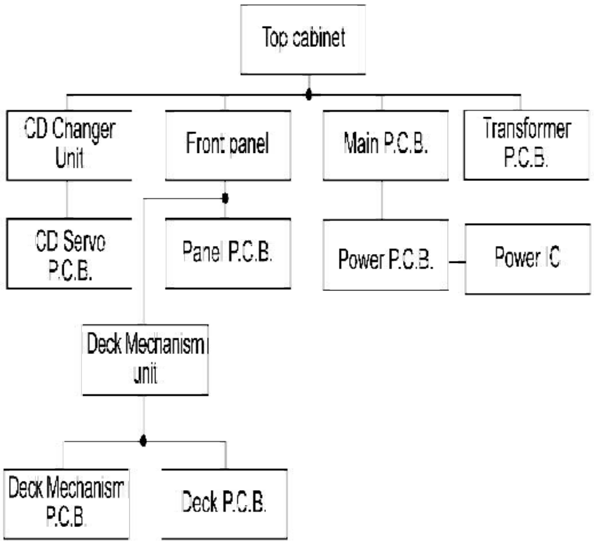
Below is the list of disassembly sections

- **Disassembly of Top Cabinet**
- **Disassembly of Rear Panel**
- **Disassembly of CD Changer Unit**
- **Disassembly of Main P.C.B.**
- **Disassembly of Transformer P.C.B.**
- **Disassembly of Power P.C.B.**
- **Disassembly of Front Panel Unit**
- **Disassembly of Panel P.C.B.**
- **Disassembly of Deck Mechanism Unit**
- **Disassembly for Deck P.C.B.**

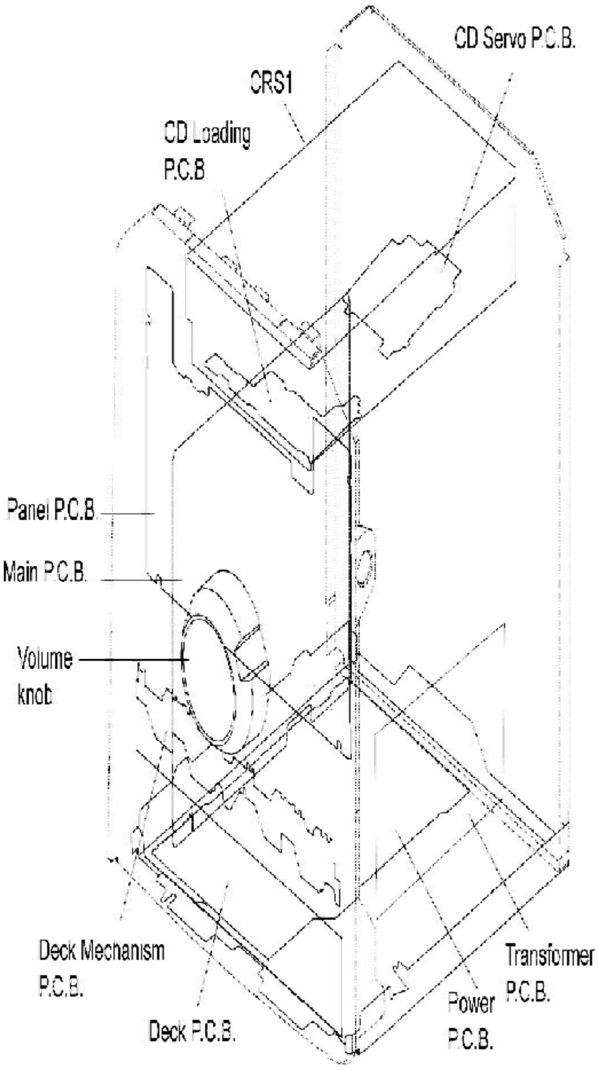
- **Disassembly of Traverse Unit**
- **Disassembly of Optical Pickup Unit (CD Mechanism)**
- **Disassembly of Deck Mechanism**
- **Replacement for cassette lid**
- **Rectification for tape jam problem**

10.2. Disassembly flow chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.
To assemble the unit, reverse the steps shown in the chart as below.


Top cabinet
CD Changer Unit
Front panel
Main P.C.B.
Transformer P.C.B.
CD Servo P.C.B.
Panel P.C.B.
Power P.C.B.
Power IC
Deck Mechanism unit
Deck Mechanism P.C.B.
Deck P.C.B.

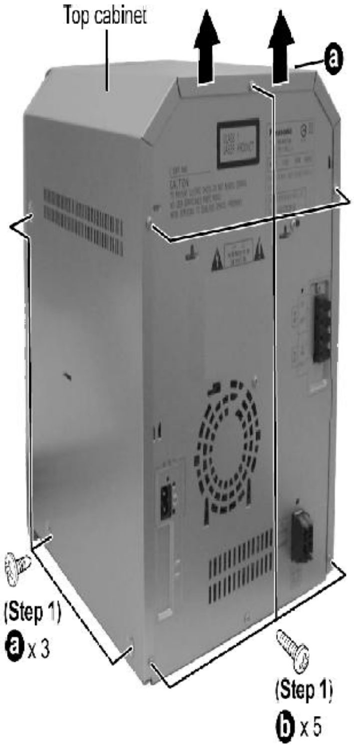
10.3. Main Parts Location


CD Servo P.C.B.
CRS1
CD Loading P.C.B
Panel P.C.B.
Main P.C.B.
Volume knob
Deck Mechanism P.C.B.
Deck P.C.B.
Power P.C.B.
Transformer P.C.B.

10.4. Disassembly of Top Cabinet

Step 1 Remove 3 screws at each side and 5 screws at rear panel.

Step 2 Lift up both sides of the top cabinet, push the top cabinet towards the rear to remove the top cabinet.


Top cabinet
a
(Step 1)
a x 3
(Step 1)
b x 5

10.5. Disassembly of Rear Panel

- Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet

Step 1 Remove 4 screws.

Step 2 Disconnect cable CN2810 (Fan) at Main P.C.B..

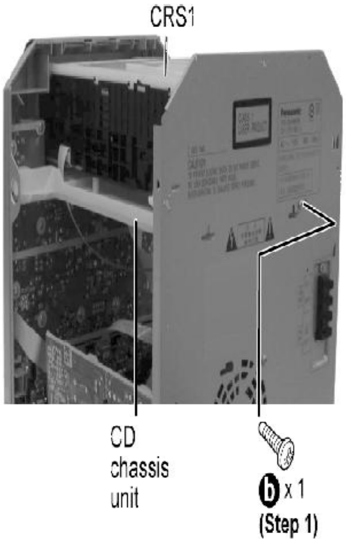
Step 3 Remove rear panel.

Rear panel
Fan

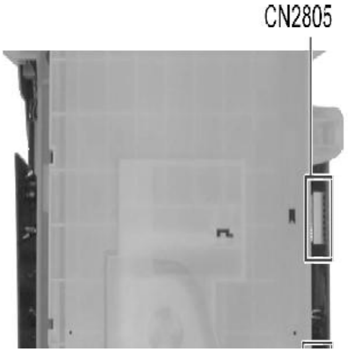
10.6. Disassembly of CD Changer Unit (CRS1)

- Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet

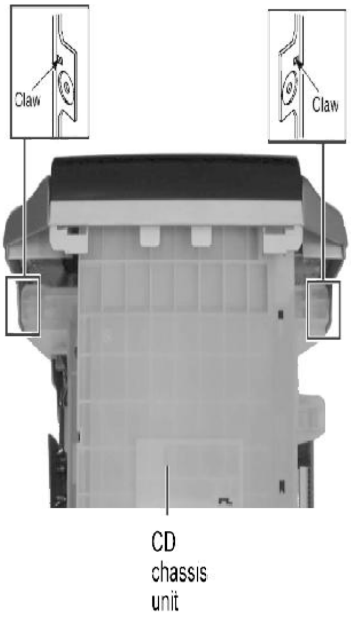
Step 1 Remove 1 screw at rear panel.

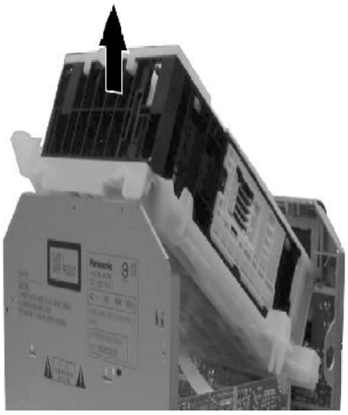

CRS1
CD chassis unit
b x 1
(Step 1)

Step 2 Detach the FFC cables (CN2801 & CN2805).



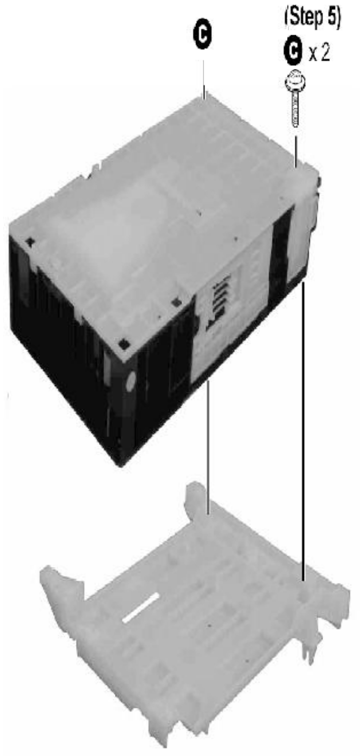
Step 3 Release the claws on both ends.


Claw
Claw
CD chassis unit



Step 4 Lift the CD changer unit upwards to remove it.

- Disassembly of Mecha Chassis



Step 5 Remove 2 screws.

Step 6 Remove the Mecha Chassis.

Note:

For disassembly & assembly of traverse unit, please refer to section 10.15 of this service manual.Please refer to original Service Manual for the Disassembly and Assembly of the CD Changer Unit (CRS1).

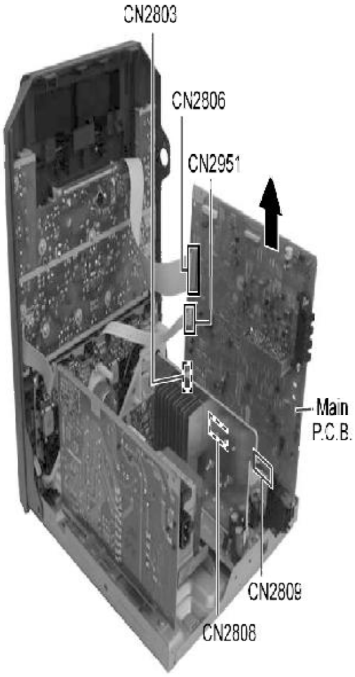
10.7. Disassembly of Main P.C.B.

- Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet

- Follow the (Step 1) - (Step 4) of Item 10.6 - Disassembly of CD Changer Unit

- Follow the (Step 1) - (Step 3) of Item 10.5 - Disassembly of Rear Panel

Step 1 Disconnect FFC cables (CN2803, CN2806 and CN2951).



Step 2 Detach connectors (CN2808 & CN2809).

Step 3 Remove Main P.C.B..

10.8. Disassembly of Transformer P.C.B.

- Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet

- Follow the (Step 1) - (Step 3) of Item 10.5 - Disassembly of Rear Panel

- Follow the (Step 1) - (Step 4) of Item 10.6 - Disassembly of CD Changer Unit

Step 1 Disconnect connectors (CN5950 & CN5951).

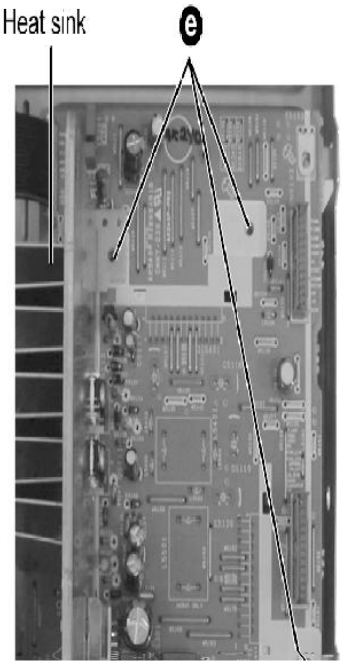
Step 2 Remove 3 screws (Mounting screws for transformer to bottom chassis).

Step 3 Push the Transformer P.C.B. sidewards to remove it.

10.9. Disassembly of Power P.C.B.

- **Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet**
- **Follow the (Step 1) - (Step 4) of Item 10.6 - Disassembly of CD Changer Unit**
- **Follow the (Step 1) - (Step 3) of Item 10.5 - Disassembly of Rear Panel**
- **Follow the (Step 1) - (Step 3) of Item 10.7 - Disassembly of Main P.C.B.**

Step 1 Remove the 4 screws on Power P.C.B..



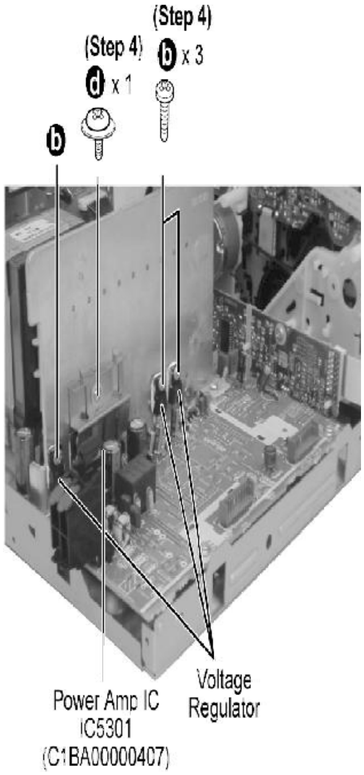
Step 2 Detach cable (CN5950) remove the 5 screws on Power P.C.B..

Step 3 Remove Power P.C.B..

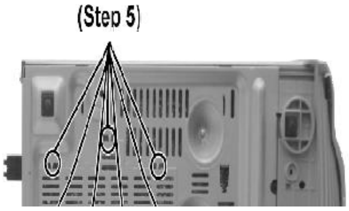
Note:

Insulate the Power P.C.B. with insulation material to avoid short circuit.

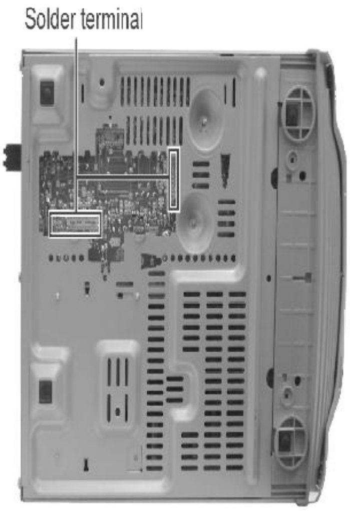
- **Replacement of the Power Amp IC or Voltage Regulator**
  Step 4 Remove 2 screws at the Power Amp IC and/or 3 screws to Voltage Regulator.


(Step 4)
b x 3
(Step 4)
d x 1
b
Power Amp IC
IC5301
(C1BA00000407)
Voltage
Regulator

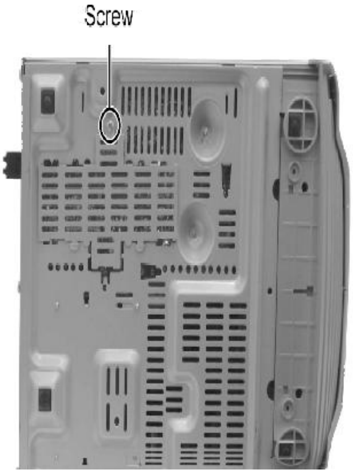
Step 5 Cut the joints with a metal cutter as shown below.



Step 6 Desolder the terminals to replace the components.



Step 7 Fix back the cut portion with a screw as shown.

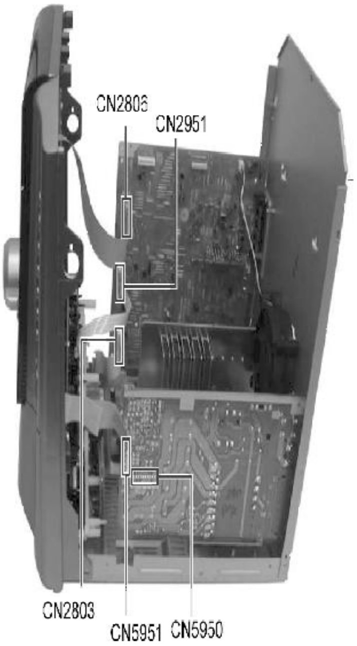


10.10. Disassembly of Front Panel Unit

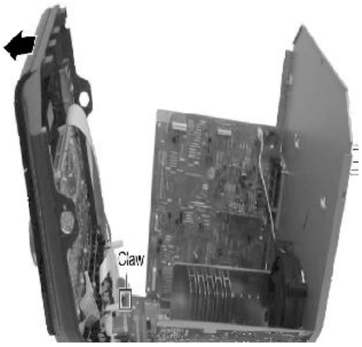
- Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet

- Follow the (Step 1) - (Step 4) of Item 10.6 - Disassembly of CD Changer Unit

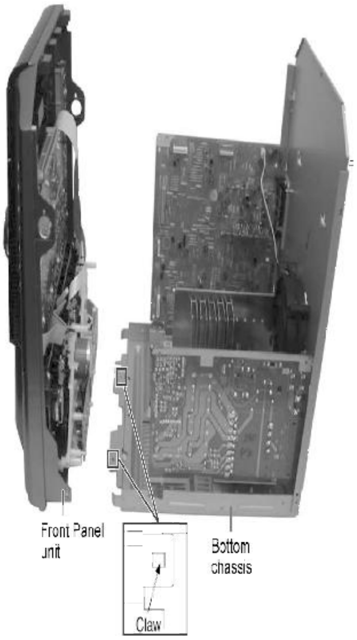
Step 1 Disconnect connectors (CN2803, CN2806, CN2951, CN5950 & CN5951).


CN2806
CN2951
CN2803
CN5951
CN5950

Step 2 Bent the front panel unit slightly forward as arrow shown.



Step 3 Release 2 claws outwards.



Step 4 Remove the front panel unit.

Note: Ensure 2 claws located at the bottom chassis is seated into the 2 slots at bottom of front panel at 2 catches (one on each side) of bottom chassis to be aligned to front panel's slot. Assembly is secured upon hearing clicking sound.

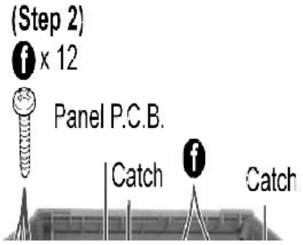
10.11. Disassembly for Panel P.C.B.

- **Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet**
- **Follow the (Step 1) - (Step 4) of Item 10.6 - Disassembly of CD Changer Unit**
- **Follow the (Step 1) - (Step 4) of Item 10.10 - Disassembly of Front Panel Unit**

Step 1 Remove the volume knob.

Panasonic
5 CD CHANGER
WMA/MP3
Volume knob

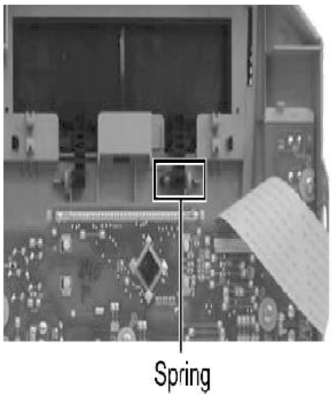
Step 2 Remove 12 screws.


(Step 2)
f x 12
Panel P.C.B.
Catch
f
Catch

Step 3 Release 2 catches.
Step 4 Remove Panel P.C.B..

10.11.1. Disassembly of Lid

Step 1 Lift the spring sideward.



Step 2 Remove Lid.
Note: Do not misplace the spring.

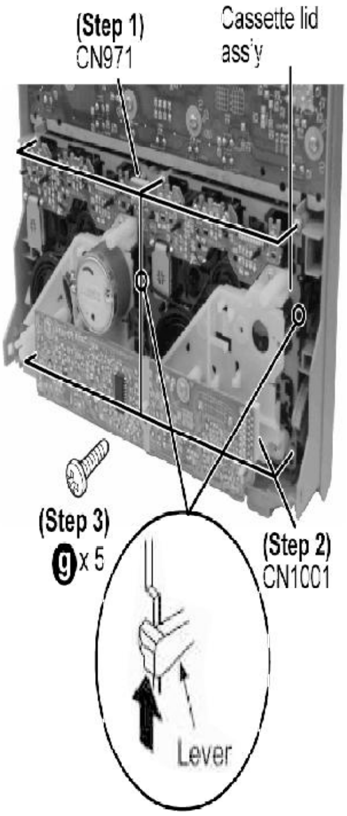
10.12. Disassembly of Deck mechanism unit

- Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet

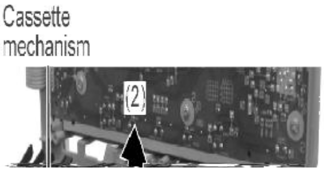
- Follow the (Step 1) - (Step 4) of Item 10.6 - Disassembly of CD Changer Unit

- Follow the (Step 1) - (Step 4) of Item 10.10 - Disassembly of Front Panel Unit

Step 1 Detach FFC cable (CN971).
Step 2 Disconnect FFC cable (CN1001).
Step 3 Remove the 5 screws.


(Step 1)
CN971
Cassette lid ass'y
(Step 3)
9 x 5
(Step 2)
CN1001
Lever

Step 4 Push the lever upward, and then open the cassette lid ass'y (For DECK1 and DECK2).


Cassette mechanism
(2)

Step 5 Tilt the cassette mechanism unit in the direction of arrow (1), and then remove it in the direction of arrow (2).

Note: For disassembly of parts for deck mechanism unit, refer to Section 10.15.

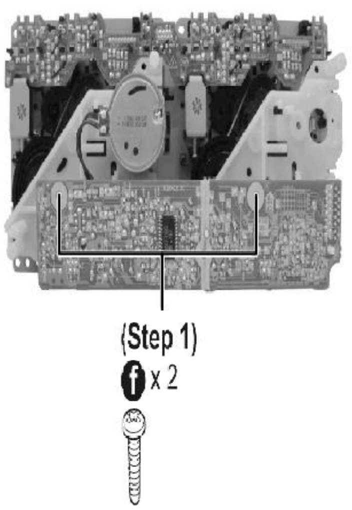
10.13. Disassembly of Deck P.C.B.

- Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet

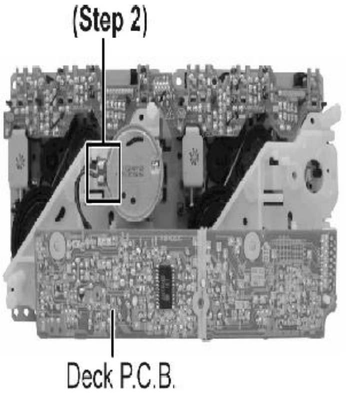
- Follow the (Step 1) - (Step 4) of Item 10.6 - Disassembly of CD Changer Unit

- Follow the (Step 1) - (Step 4) of Item 10.10 - Disassembly of Front Panel Unit

Step 1 Remove 2 screws.



Step 2 Desolder wire at deck motor terminals (W1002).

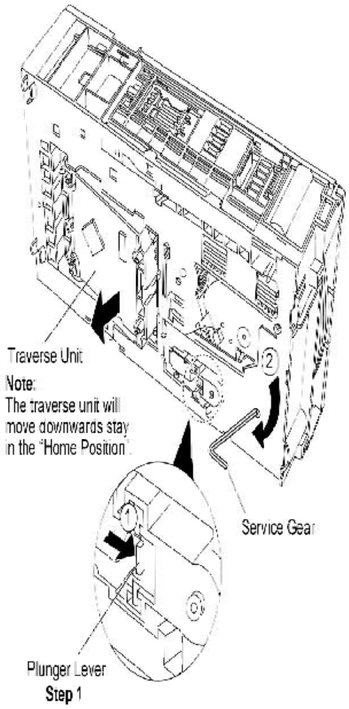


Step 3 Remove Deck P.C.B.

10.14. Disassembly of Traverse Unit

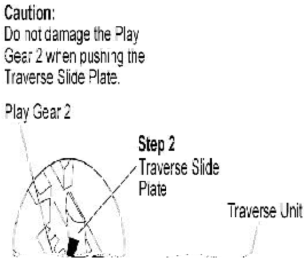
- **Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet**
- **Follow the (Step 1) - (Step 4) of Item 10.6 - Disassembly of CD Changer Unit**

Important notes: Ensure all the trays are in the “STOCK” position before proceeding to the disassemble of traverse unit. For procedures to set the trays in “STOCK” position, please refer to original Service Manual for CRS1, Section 7. Disassembling Procedure When Tray In Play Position, Order No. MD0509368C0.


Traverse Unit
1
2
Service Gear
Plunger Lever
Step 1

Note:
The traverse unit will move downwards stay in the "Home Position".

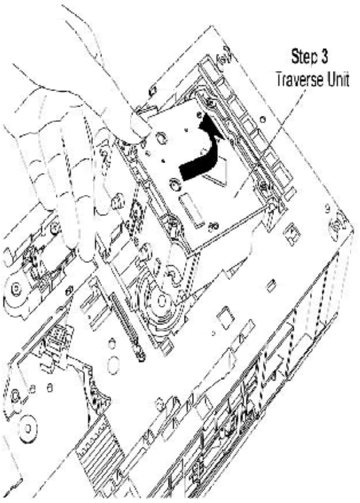
Step 1: Press and hold the plunger lever and rotate the gear as arrows shown until it stop.


Play Gear 2
Step 2
Traverse Slide Plate
Traverse Unit

Caution:
Do not damage the Play Gear 2 when pushing the Traverse Slide Plate.

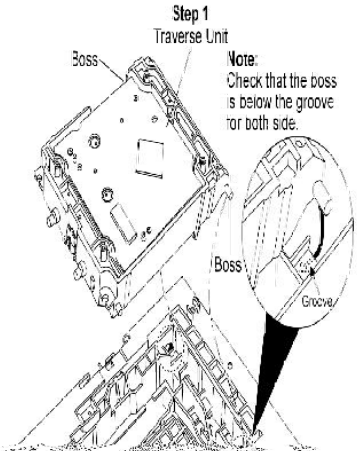
Step 2: Push the traverse slide plate as arrow shown to release the traverse unit.

Caution: Do not exert strong force on the traverse slide plate.

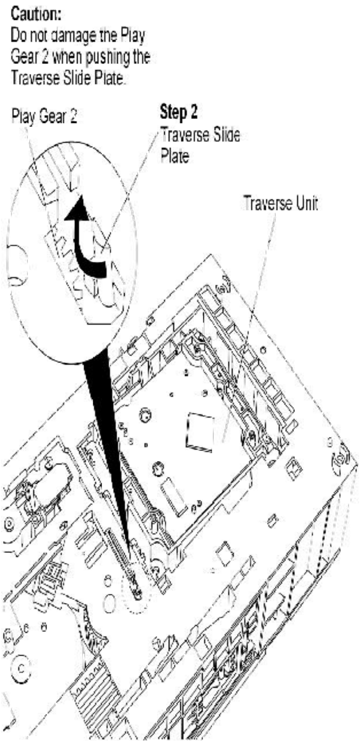

Step 3
Traverse Unit

Step 3: Remove the traverse unit as arrow shown.

- Assembly of Traverse Unit


Step 1
Traverse Unit
Boss
Note:
Check that the boss
is below the groove
for both side.
Boss
Groove

Step 1: Turn over the unit and install the traverse unit.

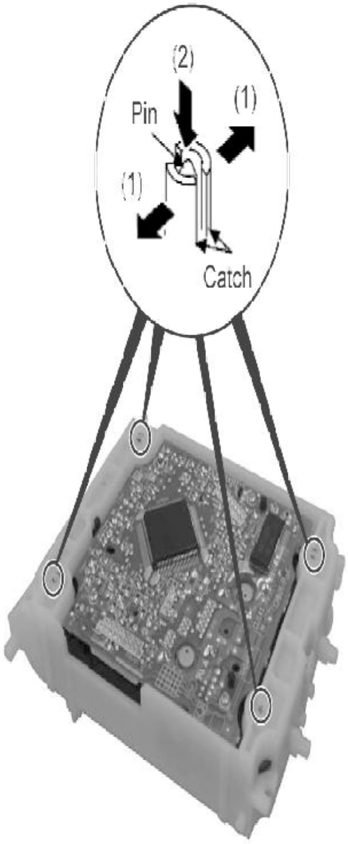

Caution:
Do not damage the Play Gear 2 when pushing the Traverse Slide Plate.
Play Gear 2
Step 2
Traverse Slide Plate
Traverse Unit

Step 2: Push the traverse slide plate as arrow shown to lock the traverse unit.

10.15. Disassembly of optical pickup unit (CD mechanism)

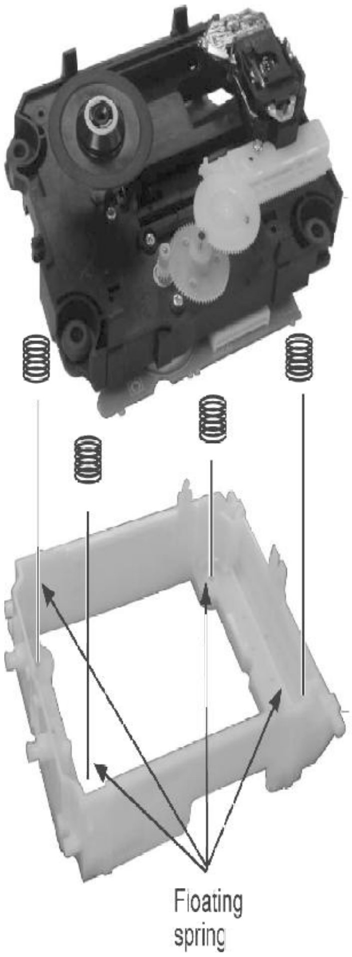
- **Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet**
- **Follow the (Step 1) - (Step 4) of Item 10.6 - Disassembly of CD Changer Unit**
- **Follow the (Step 1) - (Step 2) of Item 10.14 - Disassembly of Traverse Unit**

Step 1 Pull out FFC.


(2)
Pin
(1)
(1)
Catch

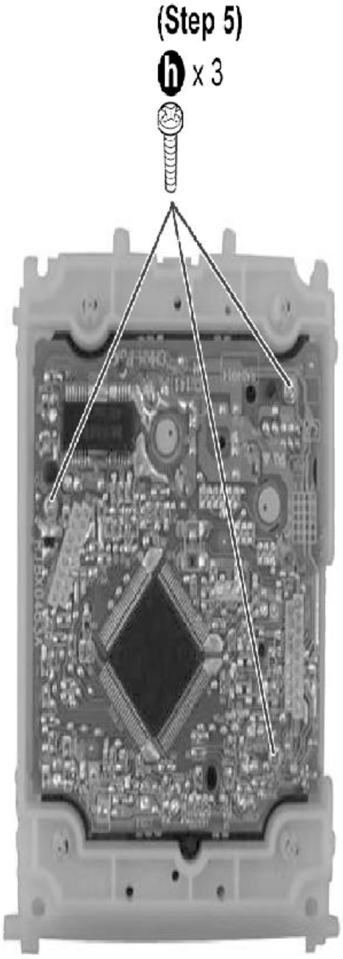
Step 2 Widening the catch, push the pin in.

Step 3 Remove 4 pins.


Floating
spring

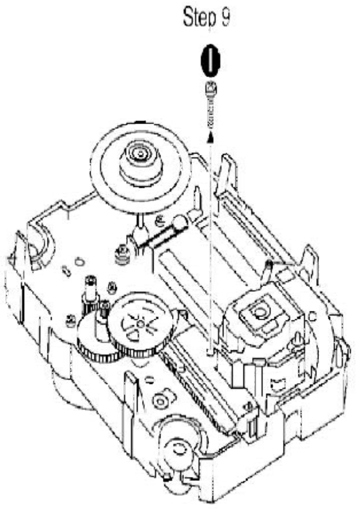
Step 4 Remove the traverse deck.

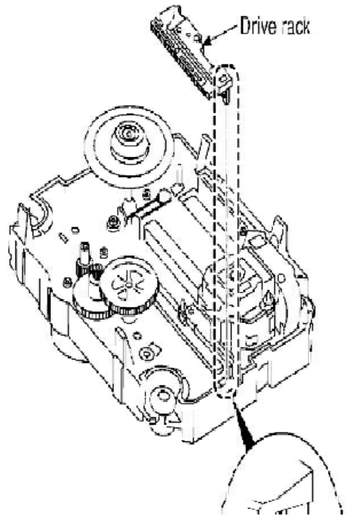
Note: As floating springs (4 pieces) come off at the same time, be careful not to lose them.



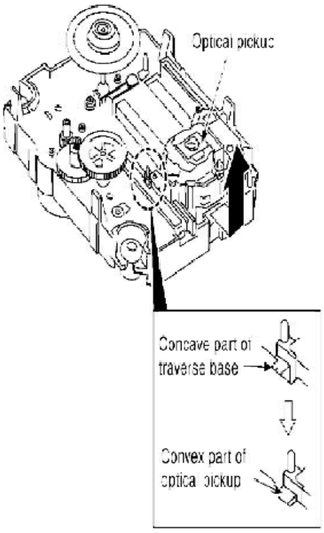
Step 5 Remove 3 screws.
Step 6 Remove the CD Servo P.C.B. and turn it over.
Note: Insert a short pin into FFC of the optical pickup.
Step 7 Rotate the traverse deck (B) to the arrow direction and shift the optical pickup to the furthest backward.

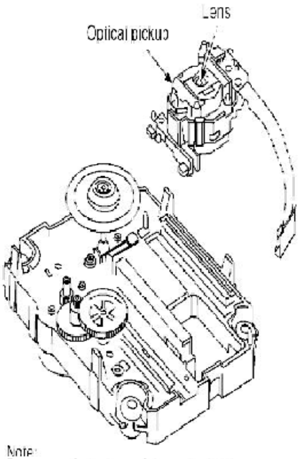
Step 8 Remove the catch of the drive rack, and take out the drive rack.





Step 9 Place the convex part of an optical pickup to the concave part of a traverse base, then take out the optical pickup.


Optical pickup
Concave part of traverse base
Convex part of optical pickup


Lens
Optical pickup

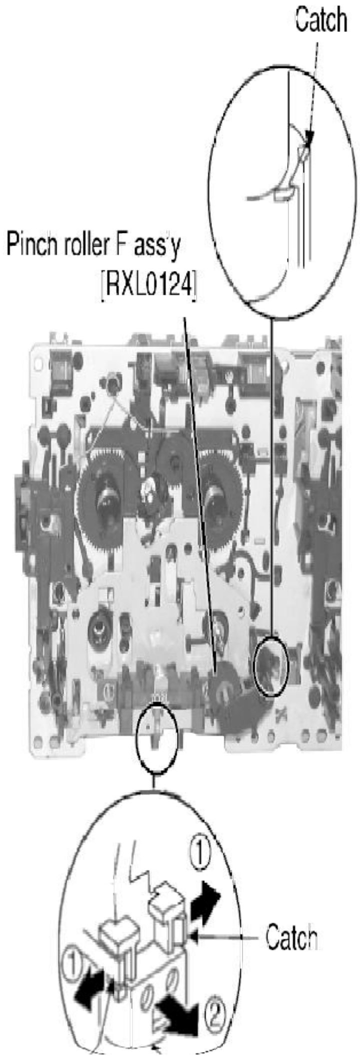
Note:
Do not touch the lens of the optical pickup

10.16. Disassembly of Deck Mechanism

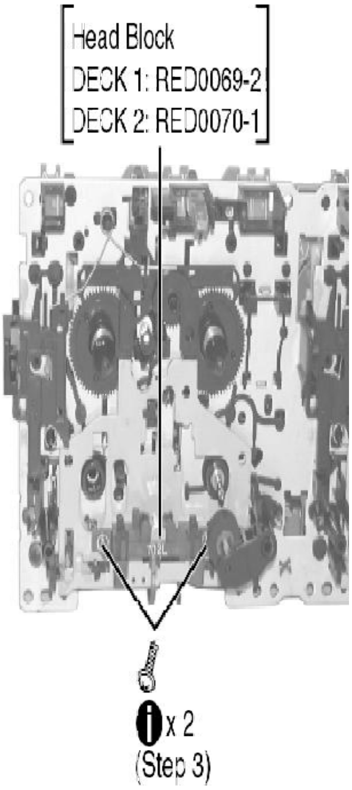
- **Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet**
- **Follow the (Step 1) - (Step 4) of Item 10.6 - Disassembly of CD Changer Unit**
- **Follow the (Step 1) - (Step 4) of Item 10.10 - Disassembly of Front Panel Unit**
- **Follow the (Step 1) - (Step 5) of Item 10.12 - Disassembly of Deck Mechanism Unit**

10.16.1. Disassembly of the pinch roller ass’y and head block

*** The mechanism as shown below is for DECK1. For DECK 2, perform the same procedures.**


Catch
Pinch roller F ass'y
[RXL0124]
①
①
②
Catch

Step 1 Release the catch, and then remove the pinch roller (F).
Step 2 Release 2 claws and detach the head block connector.


Head Block
DECK 1: RED0069-2
DECK 2: RED0070-1
x 2
(Step 3)

Step 3 Remove 2 screws.

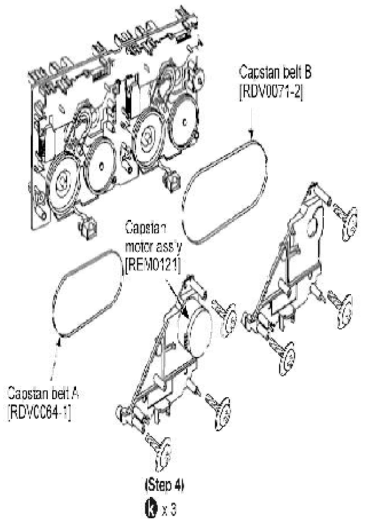
Step 4 Remove head block.

10.16.2. Disassembly of capstan motor ass'y, capstan belt A, capstan belt B and winding belt

Step 1 Detach the head block connector (Deck P.C.B.).

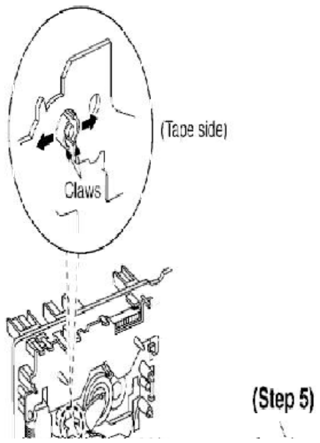
Step 2 Desolder wire(W1002) at motor assembly.

Step 3 Remove Deck P.C.B.


Capstan belt B
[RDV0071-2]
Capstan motor ass'y
[REM0121]
Capstan belt A
[RDV0064-1]
(Step 4)
x 3

Step 4 Remove 3 screws (for deck 1 & 2).

Step 5 Remove capstan belt A/B.

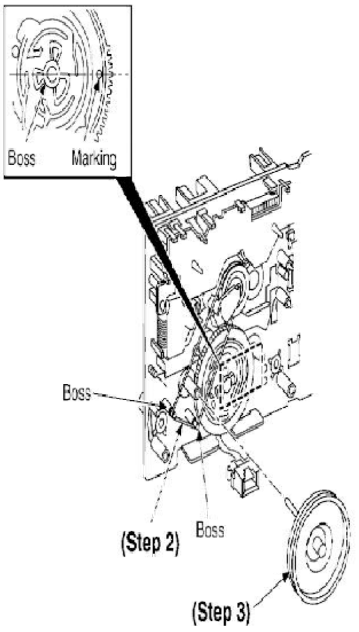

(Tape side)
Claws
(Step 5)

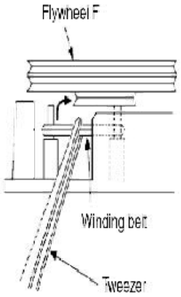
Step 6 Remove the flywheel R.

Step 7 Release the claw and remove the winding lever and spring.

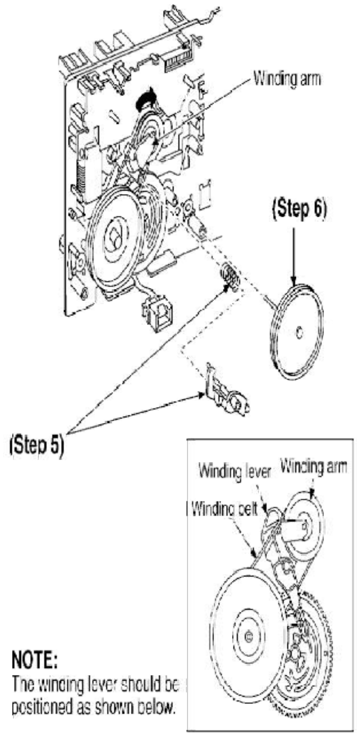
[Installation of the belt]

Step 1 The boss and marking should be positioned horizontally.

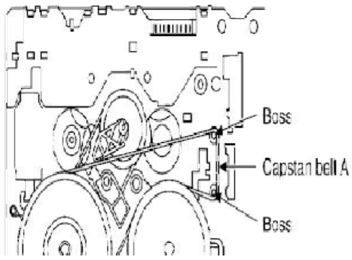

Boss
Marking
Boss
(Step 2)
Boss
(Step 3)


Flywheel F
Winding belt
Tweezer

Step 2 Put the winding belt on the pulley temporarily.
Step 3 Install the flywheel F.
Step 4 Put the winding belt on the flywheel F.
Step 5 Install the winding lever and spring while pressing the winding arm in the direction of arrow.
Step 6 Install the flywheel R.

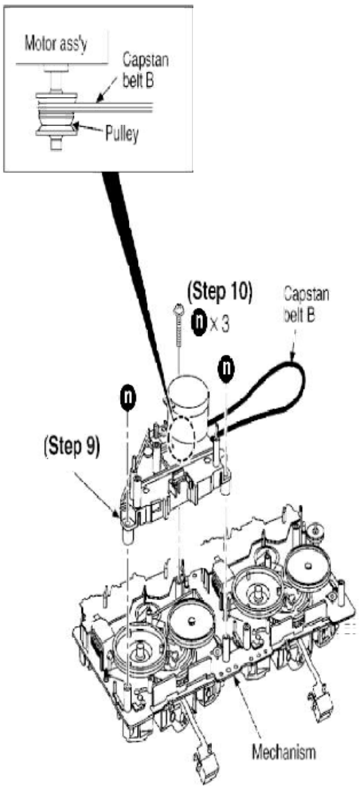

Winding arm
(Step 6)
(Step 5)
Winding lever
Winding arm
Winding belt
NOTE:
The winding lever should be positioned as shown below.

Step 7 Put the capstan belt A temporarily as shown below.


Boss
Capstan belt A
Boss

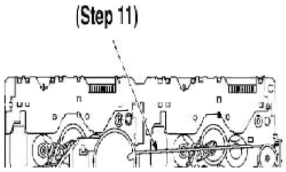
Step 8 Put the capstan belt B on the motor ass'y pulley.

Step 9 Install the sub chassis to the mechanism, and then tighten screws.


Motor ass'y
Capstan belt B
Pulley
(Step 10)
n ×3
Capstan belt B
n
n
(Step 9)
Mechanism

Step 10 Install 3 screws.

Step 11 Put the capstan belt B as shown below.

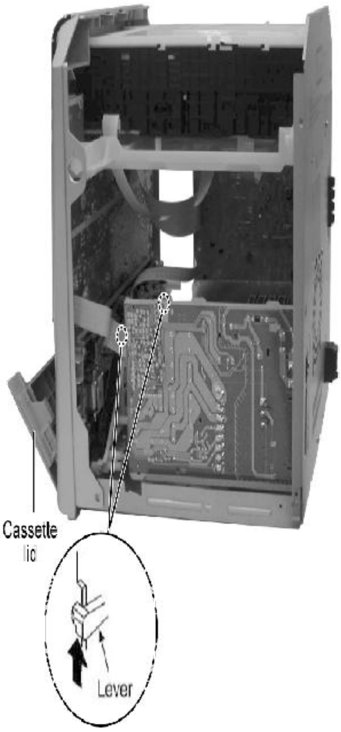


Step 12 Put the capstan belt A on the motor ass’y pulley.

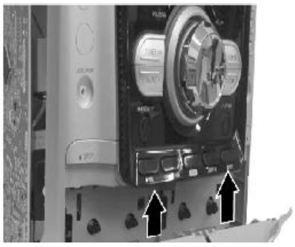
10.17. Replacement for cassette lid

- Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet

Step 1 Lift up the lever upward, open the cassette deck. (For DECK1 and DECK2)



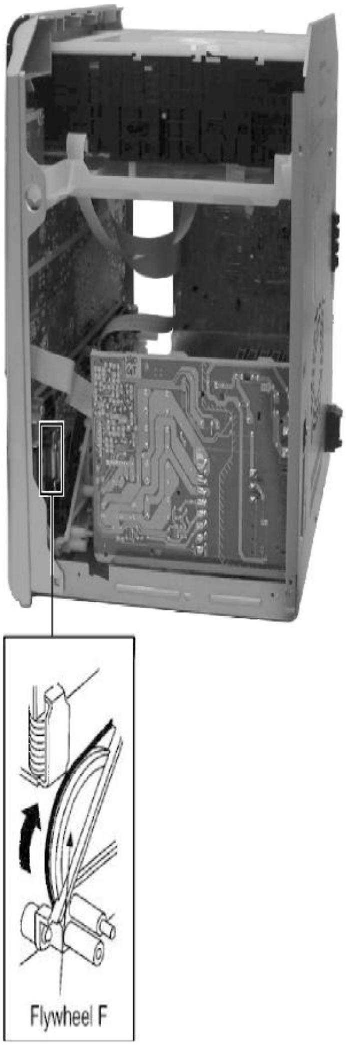
Step 2 Push up the cassette lid (L/R) in the direction of arrow. (For DECK1 and DECK2).



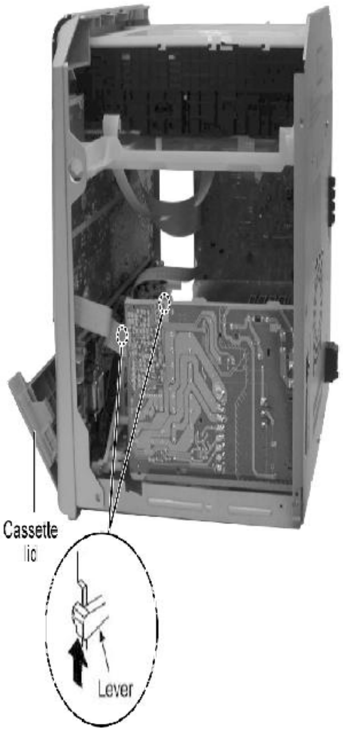
10.18. Rectification for tape jam problem

- Follow the (Step 1) - (Step 2) of Item 10.4 - Disassembly of Top Cabinet

Step 1 If a cassette tape cannot be removed from the deck (the tape is caught by the capstan or pinch roller during playback or recording), rotate the flywheel F in the direction of the arrow to remove it.



Step 2 Push the lever upward and open the cassette lid. Remove the cassette tape.



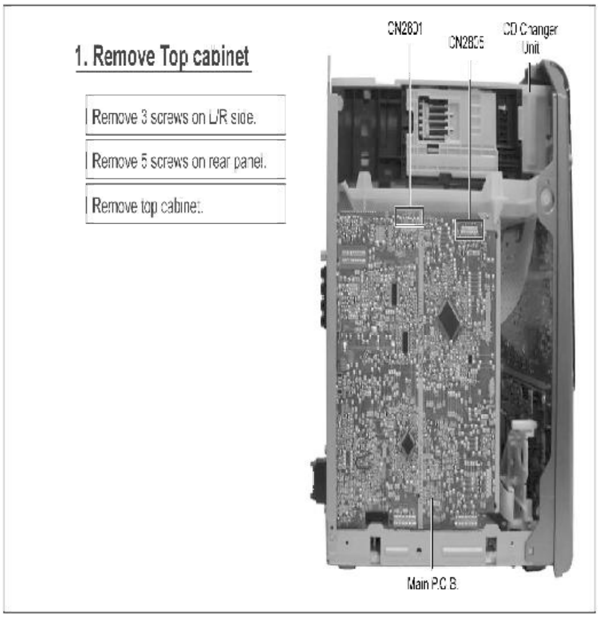
11. Service Fixture and Tools

Service Tools	
Extension FFC	
(A) Deck P.C.B. - Main P.C.B.	REEX0485 (14 Pins)
(B) Panel P.C.B. - Deck Mechanism P.C.B.	REEX0484 (10 Pins)

12. Service Positions

Note: For description of the disassembly procedures, see the Section 10.

12.1. Checking and Repairing of Main P.C.B.

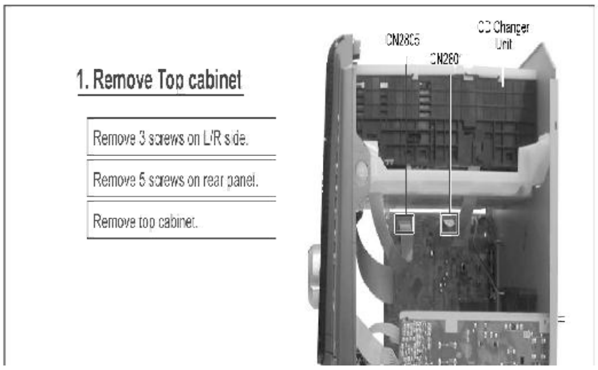


1. Remove Top cabinet

- Remove 3 screws on L/R side.
- Remove 5 screws on rear panel.
- Remove top cabinet.

CN2801
CN2805
CD Changer Unit
Main P.C.B.

12.2. Checking and Repairing of Transformer P.C.B.

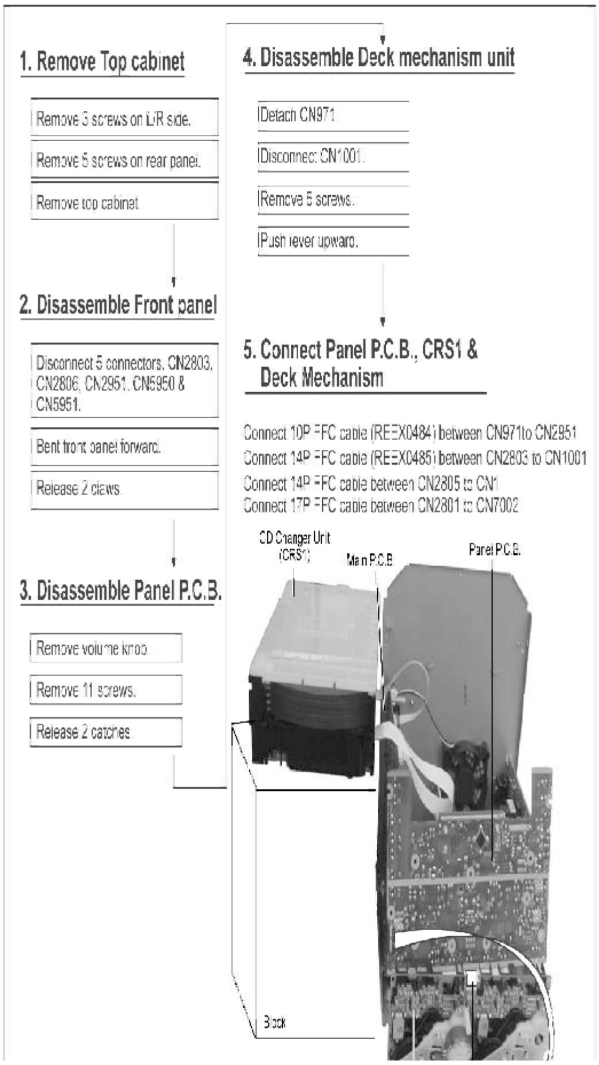


1. Remove Top cabinet

- Remove 3 screws on L/R side.
- Remove 5 screws on rear panel.
- Remove top cabinet.

CN2805
CN2801
CD Changer Unit

12.3. Checking and Repairing of Panel, Deck & Deck Mechanism P.C.B.



1. Remove Top cabinet

- Remove 3 screws on L/R side.
- Remove 5 screws on rear panel.
- Remove top cabinet.

2. Disassemble Front panel

- Disconnect 5 connectors, CN2803, CN2806, CN2951, CN5950 & CN5951.
- Bent front panel forward.
- Release 2 claws.

3. Disassemble Panel P.C.B.

- Remove volume knob.
- Remove 11 screws.
- Release 2 catches.

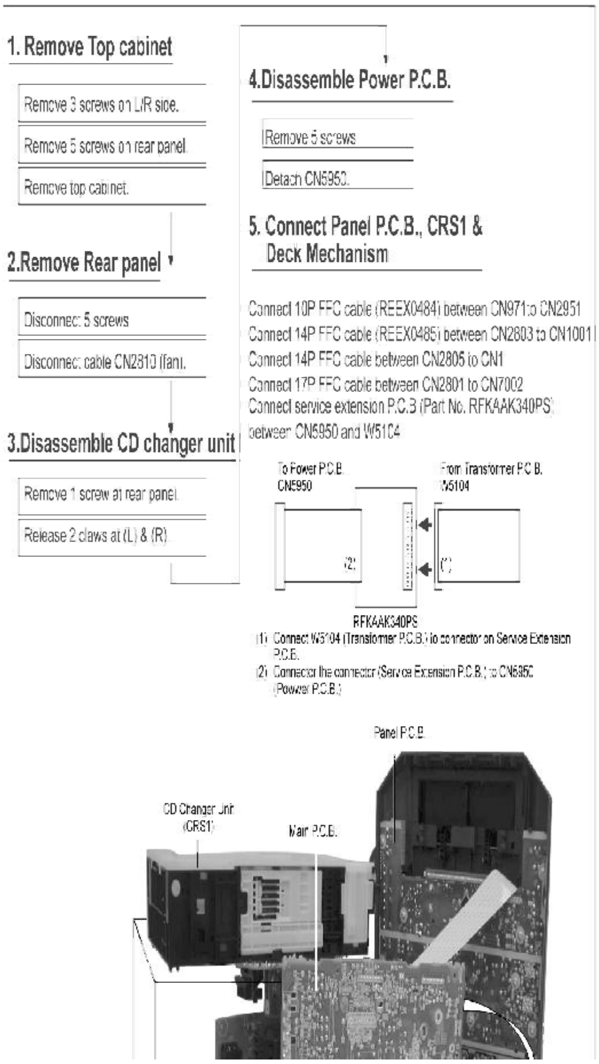
4. Disassemble Deck mechanism unit

- Detach CN971.
- Disconnect CN1001.
- Remove 5 screws.
- Push lever upward.

5. Connect Panel P.C.B., CRS1 & Deck Mechanism

Connect 10P FFC cable (REEX0484) between CN971to CN2951
Connect 14P FFC cable (REEX0485) between CN2803 to CN1001
Connect 14P FFC cable between CN2805 to CN1
Connect 17P FFC cable between CN2801 to CN7002

12.4. Checking and Repairing of Power P.C.B.



1. Remove Top cabinet

Remove 3 screws on L/R side.

Remove 5 screws on rear panel.

Remove top cabinet.

2.Remove Rear panel

Disconnect 5 screws

Disconnect cable CN2810 (fan).

3.Disassemble CD changer unit

Remove 1 screw at rear panel.

Release 2 claws at (L) & (R).

4.Disassemble Power P.C.B.

Remove 5 screws

Detach CN5950.

5. Connect Panel P.C.B., CRS1 & Deck Mechanism

Connect 10P FFC cable (REEX0484) between CN971 to CN2951

Connect 14P FFC cable (REEX0485) between CN2803 to CN1001

Connect 14P FFC cable between CN2805 to CN1

Connect 17P FFC cable between CN2801 to CN7002

Connect service extension P.C.B (Part No. RFKAAK340PS) between CN5950 and W5104

(1) Connect W5104 (Transformer P.C.B.) to connector on Service Extension P.C.B.

(2) Connector the connector (Service Extension P.C.B.) to CN5950 (Power P.C.B.)

13. Adjustments Procedures

13.1. Cassette Deck Section

- Measurement Condition

- Reverse-mode selector switch:

- Deck Tape Select: NORMAL

- Make sure head, capstan and press roller are clean.

- Judgeable room temperature 20 ± 5 °C (68 ± 9°F)

- **Measuring instrument**
- **EVM (DC Electronic voltmeter)**
- **Digital frequency counter**
- **Test Tape**
- **Tape speed gain adjustment (3 kHz, -10 dB); QZZCWAT**

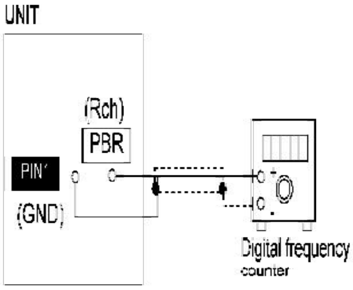
13.1.1. Tape Speed Adjustment (Deck 1/2)

1. **Insert the test tape (QZZCWAT) to DECK 2 and playback (FWD side) the middle portion of it.**
2. **Adjust Motor VR (DECK 2) for the output value shown below.**

Adjustment target: 2910 ~ 3090 Hz (NORMAL speed)

3. **After alignment, assure that the output frequency of the DECK 1 FWD are within ±60 Hz of the value of the output frequency of DECK 2 FWD.**

Fig. 1



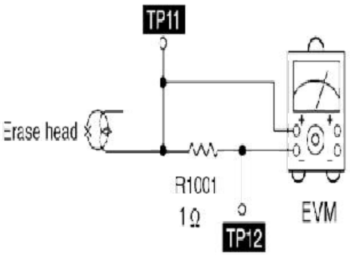
13.1.2. Bias Voltage Check

1. **Set the unit “AUX” position.**
2. **Insert the Normal blank tape (QZZCRA) into DECK 2 and the unit to “REC” mode (use “ REC/STOP” key).**
3. **Measure and make sure that the output is within the standard value.**

Bias voltage for Deck 2	**14±4mV (Normal)**

Fig. 2

Fig. 3

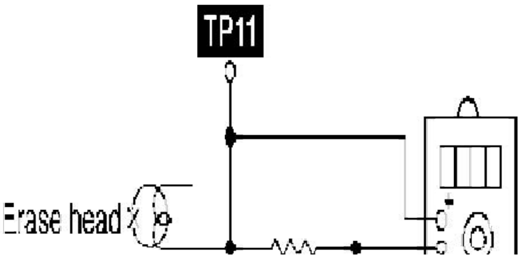


13.1.3. Bias Frequency Adjustment (Deck 1/2)

1. Set the unit to “AUX” position.
2. Insert the Normal blank tape (QZZCRA) into DECK 2 and set the unit to “REC” mode (● use “REC/STOP” key).
3. Adjust L1002 so that the output frequency is within the standard value as below.

Standard Value: 89 ~ 110 kHz

Fig. 4



13.1.3.1. Cassette Deck Section

Below is the locations of test points for Deck P.C.B.:-

13.2. Tuner Section

This section include details on the alignment of AM-IF and AM RF adjustment.

13.2.1. AM-IF Alignment

1. Set up the equipments as shown in Fig. 5.

2. Select [TUNER] mode on selector and set to [AM] mode.
3. Apply signal as shown in Fig. 5 from AM-SG.
4. Adjust Z2602 accordingly so that the output frequency is maximized at 450kHz in Fig. 6.

Fig. 5

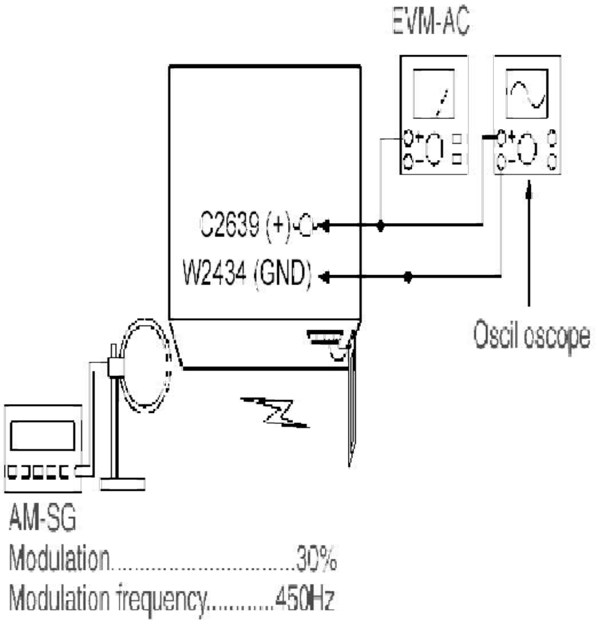
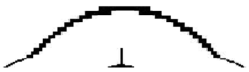

EVM-AC
C2639 (+)
W2434 (GND)
Oscil oscope
AM-SG
Modulation..............................30%
Modulation frequency...........450Hz

Fig. 6

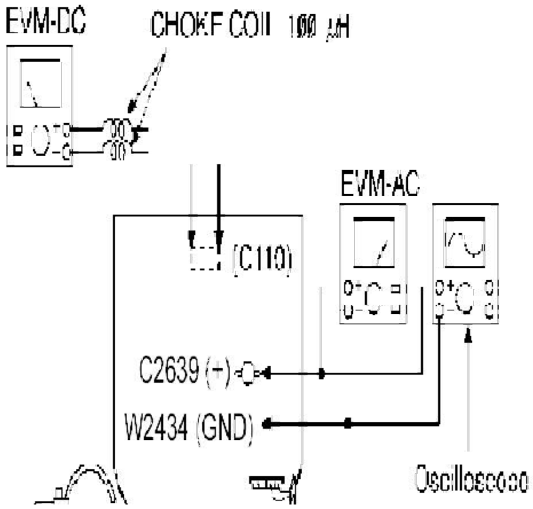


13.2.2. AM RF Adjustment

1. Set up the equipments as shown in Fig. 7.
2. Select [TUNER] on selector and set to [AM] mode.
3. Set AM-SG to 520kHz.

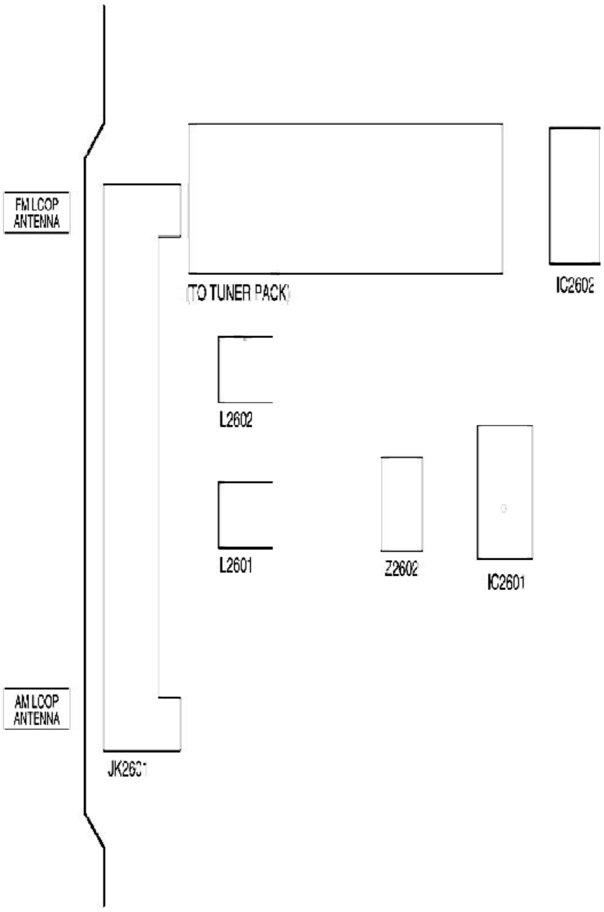
4. **Receive 520kHz in the unit.**
5. **Adjust L2601 (OSC) so that the EVM-AC is maximized.**
6. **Set AM-SG to 600Hz.**
7. **Receive 600Hz in the unit.**
8. **Adjust L2601 (ANT) so that the EVM-SG is maximized.**
9. **Set AM-SG to 520kHz.**
10. **Receive 520kHz in the unit.**
11. **Adjust L2602 (OSC) so that the EVM-DC value is with 1.1±0.5V.**

Fig. 7


EVM-DC
CHOKE COIL 100 µH
(C110)
EVM-AC
C2639 (+)
W2434 (GND)
Oscilloscope

13.2.3. Adjustment Point

Below is the locations of alignment points on the Main (Tuner) P.C.B.


FM LOOP ANTENNA
(TO TUNER PACK)
IC2602
L2602
L2601
Z2602
IC2601
AM LOOP ANTENNA
JK260

14. Voltage and Waveform Chart

Note:

Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

14.1. CD Servo P.C.B. & Main P.C.B.

14.2. Power P.C.B. & Transformer P.C.B.

14.3. Waveform Chart

15. Wiring Connection Diagram

16. Block Diagram

17. Schematic Diagram

(All schematic diagrams may be modified at any time with the development of the new technology)

17.1. Notes of Schematic Diagrams

S951

: MODE Switch

S952
: HALF Switch
S971
: MODE Switch
S972
: HALF Switch
S975
: RECINH_F Switch
S6101
: POWER Switch
S6102
: SINGLE DISC CHANGE Switch
S6103
: OPEN/CLOSE Switch
S6104
: CD 1 Switch
S6105
: CD 2 Switch
S6106
: CD 3 Switch
S6107
: CD 4 Switch
S6108
: CD 5 Switch
S6201
: DECK 2 OPEN Switch
S6202
: DISPLAY/DEMO Switch
S6203
: DECK 1/2 Switch
S6204
: H.BASS Switch
S6205
: FF Switch

S6206
: REW Switch

S6207
: DECK 1 OPEN Switch

S6301
: CD Switch

S6302
: TAPE Switch

S6303
: STOP Switch

S6304
: REC Switch

S6305
: TUNER/BAND Switch

S6306
: MUSIC PORT Switch

S6308
: MULTI DISC CHANGE Switch

S7201
: REST Switch

VR6491
: VR VOLUME JOG

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
- Importance safety notice :
  Components identified by mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !

IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminium foil.
- Put a conductive mat on the work table.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.

17.2. (A) CD Servo Circuit

17.3. (B) Main (Tuner) Circuit

17.4. (B) Main Circuit

17.5. (C) Panel Circuit

17.6. (D) Transformer Circuit

17.7. (E) Power Circuit

17.8. (F) Deck Circuit & (G) Deck Mechanism Circuit

18. Printed Circuit Board

Note: Circuit board diagrams may be modified at any time with the development of new technology.

18.1. (A) CD Servo P.C.B.

18.2. (B) Main P.C.B.

18.3. (C) Panel P.C.B.

18.4. (D) Transformer P.C.B.

18.5. (E) Power P.C.B.

18.6. (F) Deck P.C.B. , (G) Deck Mechanism P.C.B. & (H) Tuner Pack P.C.B.

19. Illustration of ICs, Transistors and Diodes

20. Terminal Function of IC’s

20.1. IC7001 (MN6627954MA) Servo Processor,Digital Signal Processor/ Digital filter and D/A Converter

Pin No.	Mark	I/O	Function
1	A11	O	DRAM address signal O/ P 11
2	A9	O	DRAM address signal O/ P 9
3	A8	O	DRAM address signal O/ P 8
4	A7	O	DRAM address signal O/ P 7
5	A6	O	DRAM address signal O/ P 6
6	A5	O	DRAM address signal O/ P 5
7	A4	O	DRAM address signal O/ P 4
8	NWE	O	Write Enable Signal (DRAM)
9	NCAS	O	DRAM CAS Control Signal
10	NRAS	O	DRAM ARS Control Signal
11	A3	O	DRAM address Signal O/ P 3
12	A2	O	DRAM address Signal O/ P 2
13	A1	O	DRAM address Signal O/ P 1
14	A0	O	DRAM address Signal O/ P 0
15	A10	O	DRAM address Signal O/ P 10
16	BA0	N.C.	Motor O/P (0);/Serial I/P
17	BA1	N.C.	Motor O/P (1);/Serial I/P
18	PRAMVSS33	-	GND (DRAM)
19	PRAMVDD15	-	Power Supply Voltage (DRAM)
20	PRAMVDD33	-	Power Supply Voltage (+ 1.6V)
21	SPOUT	O	Spindle Drive O/P
22	PC	I/O	Spindle motor drive O/P signal serial data/ Monitoring I/P
23	TRVP	O	Traverse Drive O/P (+ve)
24	TRP	O	Tracking Drive O/P (+ve)
25	FOP	O	Focusing Drive O/P (+ve)
26	DVSS1	-	GND

Pin No.	Mark	I/O	Function
27	IOVDD2	I	Digital Power Supply Voltage 2 (I/O)
28	DVDD1	-	Digital Power Supply Voltage 1 (Built-In)
29	SRVMON0	N.C.	Servo Monitor (0) O/P
30	SRVMON1	N.C.	Servo Monitor (1) O/P
31	AVSS2	-	GND
32	OSCIN	I	Oscillating Input
33	CTRCRS	N.C.	Tracking Cross Comparator
34	VREF	-	+Vref Supply Voltage
35	E	I	Tracking Input Signal 1
36	F	I	Tracking Input Signal 2
37	D	I	Focusing Input Signal 4
38	B	I	Focusing Input Signal 2
39	C	I	Focusing Input Signal 3
40	A	I	Focusing Input Signal 1
41	PD	I	APC Amp I/P
42	LD	O	Laser Drive Current O/P
43	CENV	I	Detection Capacitance Connection terminal
44	RFENV	O	RF Envelope O/P
45	RFOUT	O	RF Summing Amp O/P
46	RFIN	I	SGC I/P
47	AVDD2	I	Analog Power Supply voltage 2 (For DSL/PLL)
48	ARFDC	O	AGC Capacitive Connection Terminal
49	ARFOUT	O	AGC Output
50	ARFFB	I	ARF Feedback Signal I/P
51	ARFIN	I	Audio RF Signal I/P
52	DSLF	I	Loop Filter Terminal (For DSL)
53	IREF	I	Reference I/P
54	PLLF	I	PLL Loop Filter Terminal (Phase Compare)
55	PLLF0	O	PLL Loop Filter Terminal (Speed Compare)
56	OUTL	O	Audio O/P (LCH)
57	AVSS1	-	GND
58	AVDD1	I	Analog Power Supply Voltage 1
59	OUTR	O	Audio O/P (RCH)
60	DVSS3	-	GND3 (Digital Circuit)

Pin No.	Mark	I/O	Function
61	NSRVMONON	I	Servo Motor O/P Enabling
62	EXT0	N.C.	Expansion O/P Port 0
63	EXT1	N.C.	Expansion O/P Port 1
64	EXT2	N.C.	Expansion O/P Port 2
65	FLAG	N.C.	Flag Signal O/P
66	TX	N.C.	Digital Audio Interface O/P signal
67	MCLK	I	Micro-Computer Command Clock I/P
68	MDATA	I	Micro-Computer Data I/P
69	MLD	I	Micro-Computer Load I/P
70	STAT	O	Status Signal O/P
71	BLKCK	O	Subcode Blk Clock
72	NRST	O	LSI Reset Signal
73	DQSYTXT	N.C.	Pack Signal O/P for CD-Text data
74	SMCK	N.C.	Micro-Computer Clock O/P
75	PMCK	N.C.	IOCNT Serial data O/P (Synchronous O/P)
76	DVDD2	-	Digital Power Supply Voltage 2 (+1.5V)
77	IOVDD1	-	Digital Power Supply Voltage 1 (For I/O)
78	DVSS2	-	GND2 (For Digital Circuit)
79	NTEST2	I	Test Mode Setting (ON: H)
80	X2	O	Crystal Oscillating Circuit O/P
81	X1	I	Crystal Oscillating Circuit I/P
82	NTEST	I	Test Mode Setting I/P (ON:H)
83	D2	I/O	Data Signal O/P 2
84	D1	I/O	Data Signal O/P 1
85	D0	I/O	Data Signal O/P 0
86	D3	I/O	Data Signal O/P 3
87	D4	I/O	Data Signal O/P 4
88	D5	I/O	Data Signal O/P 5
89	D6	I/O	Data Signal O/P 6
90	D7	I/O	Data Signal O/P 7
91	D15	I/O	Data Signal O/P 15
92	D14	I/O	Data Signal O/P 14

Pin No.	Mark	I/O	Function
93	DRVDD	I	I/O Power Supply Voltage (DRAM)
94	D13	I/O	Data Signal O/P 13
95	D12	I/O	Data Signal O/P 12
96	D11	I/O	Data Signal O/P 11
97	D10	I/O	Data Signal O/P 10
98	D9	I/O	Data Signal O/P 9
99	D8	I/O	Data Signal O/P 8
100	SDRCK	O	Clock Signal O/P

20.2. IC7002 (BA5948FPE2) IC 4CH Drive

Pin No.	Mark	I/O	Function
1	IN2	I	Motor Driver 92 Input
2	PC2	I	Turntable Motor Drive Signal (“L”:ON)
3	IN1	I	Motor Drive (1) Input
4	PC1	-	Traverse Motor Drive Signal (“L”): ON)
5-8	N.C.	-	No Connection
9	PGND1	-	Ground Connection (1) for Drive
10	PVCC1	I	Power Supply (1) for Drive
11	D1-	O	Motor Drive (1) reverse - action output
12	D1+	O	Motor Drive (1) forward - action output
13	D2-	O	Motor Drive (2) reverse - action output
14	D2+	O	Motor Drive (2) forward - action output
15	D3-	O	Motor Drive (3) reverse - action output
16	D3+	O	Motor Drive (3) forward - action output
17	D4-	O	Motor Drive (4) reverse - action output
18	D4+	O	Motor Drive (4) forward - action output
19	PVCC2	-	Power Supply (2) for Driver

Pin No.	Mark	I/O	Function
20	PGND2	-	Ground Connection (2) for Driver
21-24	N.C.	O	No Connection
25	VCC	I	Power Supply terminal
26	VREF	I	Reference Voltage Input
27	IN4	I	Motor Driver (4) Input
28	IN3	I	Motor Driver (3) Input

20.3. IC2801 (C2CBYY000053) System Microprocessor

Pin No.	Mark	I/O	Function
1	LM_1	-	Level Meter
2	PA_LVL	-	No Connection
3	PLLCE	O	PLL Chip Select
4	RDS_DA	I	RDS Data Input
5	RDS_CLK	I	RDS Clock Input
6	MODE_A	-	No Connection
7	F_Hop	O	F_Hop for Digital Amp
8	BYTE	-	External Data Bus Width Select Input (Connect to Ground)
9	CNVSS	-	Flash Mode Terminal (Connect to Ground)
10	XC_IN	-	32.768 kHz Sub Clock
11	XC_OUT	-	32.768 kHz Sub Clock
12	/RESET	-	Reset Input (ACTIVE L)
13	X_OUT	-	10 MHz Main Clock
14	VSS	-	Ground (0V)
15	XIN	-	10 MHz Main Clock
16	VCC	-	Power Supply (+5V)
17	/NMI	-	Connect to Vcc (+5V)
18	RMT	I	Remote Control Input
19	BLKCK	I	CD Block Clock Input (Inverted)
20	SYNC	I	AC Failure Detect Input
21	ST/DO	I	Tuner IF Data/ Stereo Input
22	SD	I	Tuner Signal Detect Input
23	N.C.	-	No Connection
24	SW_LV-1	O	Sub-Woofer Level 1
25	SW_LV-2	O	Sub-Woofer Level 2
26	ASP_DA	O	ASP DATA
27	ASP_CLK	O	ASP CLOCK

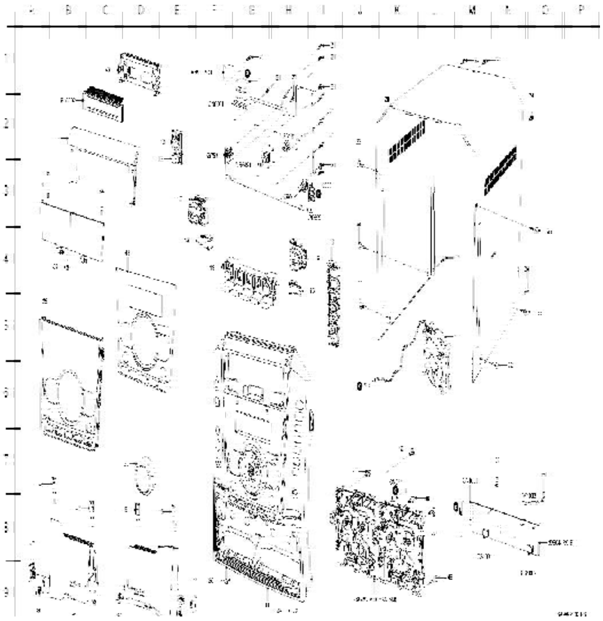
Pin No.	Mark	I/O	Function
28	10DB_ATT	O	No Connection
29	PLL_DAT	O	PLL DATA
30	PLL_CLK	O	PLLCLK
31	REG8	-	To GND resistor
32	REG7	I	Region Setting 7 (MIC)/ Flash Rx
33	REG6	I	Region Setting 6 (RDS)/ Flash Clock
34	REG5	O	Chip Select/Flash Busy
35	REG4	I	Latin Non Chip Select
36	REG3	I	Region Setting 3 (Tuner)
37	REG2	I	Region Setting 2 (Tuner)
38	REG1	I	Region Setting 1 (Tuner)
39	MUTE_DA	O	Mute_DA for Digital Amp
40	MUTE_A	O	Audio Mute
41	EE_CS/EFP/ EPH	O	EEPROM Chip Select
42	EE_CLK	O	EEPROM CLOCK
43	EE_DAT	I/O	EEPROM DATA
44	N.C.	-	No Connection
45	N.C.	-	No Connection
46	PCONT/EFP/ CS	O	Main Transformer Control Output
47	DCDET	I	DC Detect Input
48-49	N.C.	-	No Connection
50	STANDBY	O	Standby mode
51	N.C.	-	No Connection
52	HALF_1	I	Deck 1 HALF PLAYBACK INPUT
53	MODE_1	I	Deck 1 MODE PLYABACK INPUT
54	N.C.	-	No Connection
55	N.C.	-	No Connection
56	PLG1	O	Deck 1 plunger control
57	PLG2	O	Deck 2 plunger control
58	MTR	O/I	Deck motor control (“L” for motor ON)
59	REC	O/I	L when record circuit is operating
60	DECK1_H	O	H when DECK 1 P/B head is selected
61	N.C.	-	No Connection
62	VCC	-	Power Supply (+5V)
63	N.C.	-	No Connection
64	VSS	-	Ground (0V)

Pin No.	Mark	I/O	Function
65	SW_LED	O	SUB WOOFER LED
66	VOL_LED	O	VOLUME_LED
67	V_JOG_A	I	Volume Jog A
68	V_JOG_B	I	Volume Jog B
69	FL_RESET	O	FL Driver reset
70	FL_CS	I/O	FL Driver Chip Select
71	FL_DOUT	O	Serial Data To FL Driver
72	FL_CLK	I/O	Serial Clock To FL Driver
73	H.BASS_LED	O	H.BASS LED
74	CD_RST	O	CD Reset Output
75	STATUS	I	CD Servo LSI Status Input
76	MLD	O	CD Command Load Output
77	MDATA	O	CD Command Data Output
78	MCLK	O	CD Command Clock Output
79	/RESTSW	I	CD Limit Switch Input for the most Inner Point (Active Low)
80	HOME_SW	I	Home Switch for CRS1
81	SPEED	O	SPEED is For CRS1 (cater)
82	CLOSE_SW	I	CLOSE SW is for CRS1
83	OPEN_SW	I	Open_Sw for CRS1
84	CHG_CW	O	CRS1 motor CW
85	CHG_CCW	O	CRS1 motor CCW
86	ST_SW	I	Stock_Sw for CRS1
87	PLAY_SW	I	Play_Sw for CRS1
88	CHG_PLR	O	Plunger for CRS1
89	BOTTOM_SW	I	Bottom_SW for CRS1
90	UP_SENSOR	I	UD-Sensor for CRS1
91	DECK2	I	DECK CONDITION INPUT 2 (R_INHF/MODE2/HALF2)
92	KEY3	I	KEY3 INPUT
93	KEY2	I	KEY2 INPUT
94	KEY1	I	KEY1 INPUT
95	PHOTO_2	I	Rotation Detection Signal (Deck 2)
96	AVSS	-	Analog Power Supply Input (Connect to GND)
97	PHOTO_1	I	Rotation Detection Signal (Deck 1)

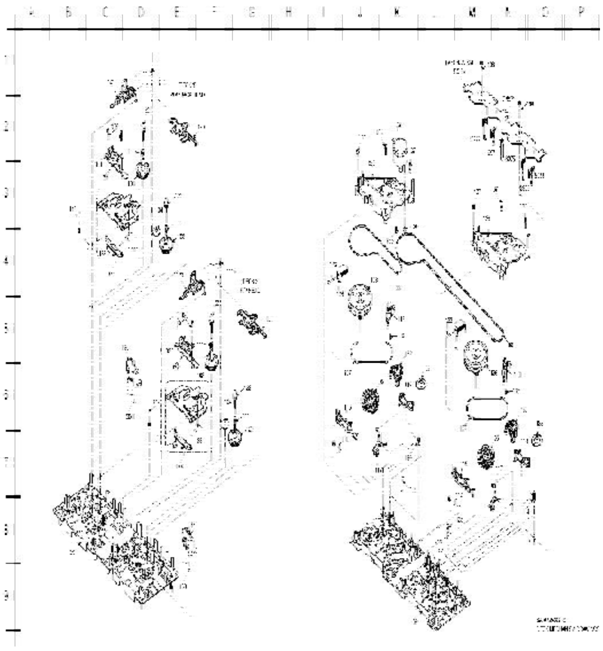
Pin No.	Mark	I/O	Function
98	VREF	-	Reference for A-D (5V)
99	AVCC	-	Analog Power Supply Input
100	DEMO	I	(H= default demo on, L= default demo off.)

21. Exploded Views

21.1. Cabinet Parts Location



21.2. Deck Mechanism Parts Location (RAA4502-S)


A
B
C
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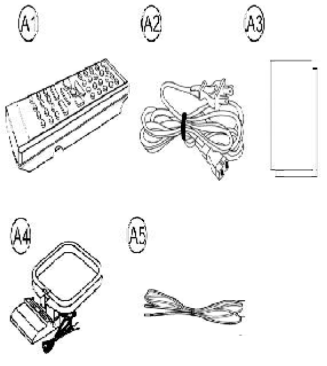
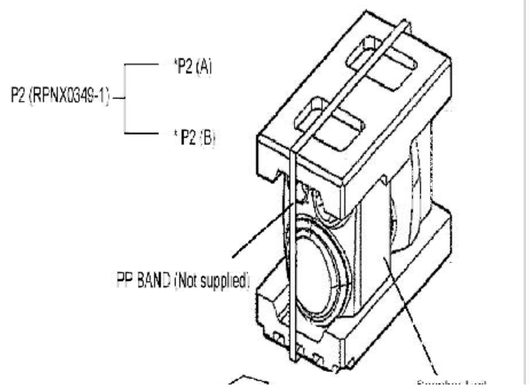
21.3. Packaging

ACCESSORIES BAG

A1 REMOTE CONTROL
A2 AC CORD
A3 O/I BOOK
A4 AM LOOP ANTENNA
A5 FM ANTENNA WIRE


A1
A2
A3
A4
A5


P2 (RPNX0349-1)
*P2 (A)
* P2 (B)
PP BAND (Not supplied)

22. Replacement Parts List

Notes:

- **Important safety notice:**
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purposes of fire-retardent (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.
  When replacing any of these components, be sure to use only manufacturer’s specified parts shown in the parts list.
- **The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)**
  Parts without these indications can be used for all areas.
- **Warning: This product uses a laser diode. Refer to caution statements on “Precaution of Laser Diode”.**
- **Capacitor values are in microfarads (µF) unless specified otherwise, P= Pico-farads (pF), F= Farads.**
- **Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM).**
- **The marking (RTL) indicates that the Retention Time is limited for this items. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of a availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.**
- **[M] Indicates in the Remarks columns indicates parts supplied by PAVCSG.**
- **Reference for O/I book languages are as follows:**

Ar:	Arabic	Du:	Dutch	It:	Italian	Sp	Spanish
Cf:	Canadian French	En:	English	Ko:	Korean	Sw:	Swedish
Cz:	Czech	Fr:	French	Po:	Polish	Co:	Traditional Chinese
Da:	Danish	Ge:	German	Ru:	Russian	Cn:	Simplified Chinese
Pe:	Persian						

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	L6FALEFH0030	FAN UNIT	[M]
2	REEX0212-2	14P FFC WIRE	[M]
3	REEX0503	10P FFC WIRE	[M]
4	REEX0513	17P FFC WIRE	[M]
5	REEX0528	14P FFC WIRE	[M]
6	REEX0529	30P FFC WIRE	[M]
7	RGKX0319-KJ	TOP ORNAMENT	[M]
8	RGKX0320A-KJ	CD LID	[M]
10	RGLX0121-Q	POWER LIGHT PIECE	[M]
11	RGPX0207C-S1	FRONT PANEL	[M]
12	RGRX0054D-F	REAR PANEL	[M]
13	RGUX0637-SJ	POWER/DISC BUTTON	[M]
14	RGUX0638-SJ	OPEN DECK 1 BUTTON	[M]
15	RGUX0639-SJ	OPEN DECK 2 BUTTON	[M]
16	RGUX0640-SJ	DISC/OPEN/5CD BUTTON	[M]
17	RGUX0642-SJ	FUNCTION BUTTON L	[M]
18	RGUX0643-SJ	FUNCTION BUTTON R	[M]
19	RGUX0644-KJ	CONTROL BUTTON	[M]
20	RGWX0094-S	VOLUME KNOB	[M]
21	RHD26046-L	SCREW	[M]
22	RHD30007-1SJ	SCREW	[M]
23	RHD30111-3	SCREW	[M]
24	RHD30119-S	SCREW	[M]
25	RKA0072-KJ	LEG CUSHION	[M]
26	RKFX0131-SJ	CASS LID L	[M]
27	RKFX0132-SJ	CASS LID R	[M]
28	RKMX0117-SJ	TOP PANEL (BEND)	[M]
29	RKWX0253-H	FL WINDOW	[M]
30	RMBX0036	CASS OPEN SPRING	[M]
31	RMBX0049	CD LID OPEN SPRING	[M]
33	RMCX0021-J	TRANSISTOR CLIP	[M]
34	RMG0547-K	CUSHION	[M]
35	XTWS3+6TFJ	SCREW	[M]
36	RMGX0044	D.AMP. INSULATOR	[M]
37	RMKX0112	BOTTOM CHASSIS	[M]
38	RMKX0113	CD CHASSIS	[M]
40	RMNX0163	FL HOLDER	[M]
42	XTW3+10TFC	SCREW	[M]
43	RMVX0092A	FL WINDOW BACKGROUND	[M]
45	RUS757ZAA	CASS HALF SPRING	[M]
46	XTV3+10GFJ-M	SCREW	[M]
47	RXGX0002	DAMPER GEAR	[M]
48	RXXX0066A	HEAT SINK UNIT	[M]
49	XTW3+12TFJ	SCREW	[M]
		CASSETTE DECK	
101	RED0069-2	R/P HEAD BLOCK UNIT	[M]
102	RED0070-1	P/B HEAD BLOCK UNIT	[M]
103	RDG0300	REEL BASE GEAR	[M]
104	RDG0301	WINDING RELAY GEAR	[M]
105	RDK0026-4	MAIN GEAR	[M]
107	RDV0033-4	WINDING BELT	[M]
108	RDV0064-1	CAPSTAN BELT	[M]
109	RDV0071-2	CAPSTAN BELT B	[M]

[illegible]	[illegible]	[illegible]	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
110	RMB0312	TRIGGER LEVER SPRING	[M]
111	RMB0400	REEL SPRING	[M]
112	RMB0403	HEAD PANEL SPRING	[M]
113	RMB0404	BRAKE ROD SPRING	[M]
114	RMB0406-5	FR LEVER SPRING	[M]
115	RMB0408	THRUST SPRING	[M]
116	RML0370-4	TRIGGER LEVER	[M]
117	RML0371	FR LEVER	[M]
118	RML0372-2	WINDING LEVER	[M]
119	RML0374-2	EJECT LEVER	[M]
120	RMM0131-1	BRAKE ROD	[M]
121	RMM0133-1	EJECT ROD	[M]
122	RMQ0519	REEL HUB	[M]
123	RMS0398-1	MOVING CORE	[M]
124	RSJ0003	PLUNGER ASS'Y	[M]
125	RMC0061	PACK SPRING	[M]
126	RXF0061-1	FLYWHEEL F ASS'Y	[M]
128	RXG0040	FF RELAY GEAR ASS'Y	[M]
129	RMK0283A-2	SUB-CHASSIS	[M]
130	RXL0124	PINCH ROLLER F ASS'Y	[M]
130-1	RMB0401	PINCH ARM SPRING F	[M]
132	RXL0126	WINDING ARM ASS'Y	[M]
133	RXQ0412-3	HEAD PANEL ASS'Y	[M]
133-1	RMB0405-1	FR ROD SPRING	[M]
133-2	RMM0132-1	FR ROD	[M]
134	REM0121	CAP MOTOR ASS'Y	[M]
135	RHD26022-1	MOTOR SCREW	[M]
136	XTW2+5LFJ	HEAD BLOCK UNIT SCREW	[M]
137	XTW26+10SFJ	SUB-CHASSIS SCREW	[M]
138	XYC2+JF17FJ	PCB EARTH SCREW	[M]
139	RFKJAA4501-S	CHASSIS ASS'Y	[M]
		TRAVERSE DECK	
358	RFKNCT121157	SPINDLE MOTOR ASS'Y	[M]
358-1	RXQ0632	TRV MOTOR UNIT	[M]
358-2	XQN17+C28FJ	SCREW	[M]
359	RDG0455	TRV GEAR (A)	[M]
360	RDG0456	TRV GEAR (B)	[M]
361	RXQ0999	OPU UNIT	[M]
362	RMM0218	TRV DRIVE RACK	[M]
363	SNSD38-1	SCREW	[M]
364	RMS0757-1	FIXED PIN	[M]
365	RMG0703-R	FLOATING RUBBER	[M]
366	RME0109	FLOATING SPRING	[M]
367	XTN2+6GFJ	SCREW	[M]
368	RMRX0064	MIDDLE CHASSIS	[M]
369	RAE0157A-V	TRV UNIT WITHOUT SERVO	[M]
		PRINTED CIRCUIT BOARDS	
	REPX0494A	CD SERVO P.C.B.	
	REPX0516P	MAIN P.C.B.	[M]
	REPX0517D	PANEL P.C.B.	[M]
	REPX0518M	TRANSFORMER P.C.B.	[M]
	REPX0533B	POWER P.C.B.	[M]
	REPX0331E	DECK P.C.B.	[M]

	[illegible]	DECK P.C.B.	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
	REPX0321A	DECK MECHANISM P.C.B.	[M]
	REP1999B	TUNER PACK P.C.B.	[M]
		INTEGRATED CIRCUITS	
IC951	CNB13030R2AU	IC PHOTO INTERRUPTER	[M]
IC971	CNB13030R2AU	IC PHOTO INTERRUPTER	[M]
IC1001	AN7348S-E1	IC P.B. EQ/REC AMP/ALC/TPS AMP	[M]
IC1004	C1AA00000612	IC R/P SELECT	[M]
IC2601	C1BB00000962	IC FM/AM IF AMP,DET/AM OSC,MIX/FM MPX	[M]
IC2602	C1CB00001937	IC PLL FREQUENCY SYNTHESIZER	[M]
IC2801	C2CBYY000053	IC MICROPROCESSOR	[M]
IC2803	C1BB00001121	IC AUDIO SOUND PROCESSOR	[M]
IC2804	C0AABB000125	IC DUAL OP AMP	[M]
IC5201	C0JBAB000011	IC LOGIC	[M]
IC5301	C1BA00000407	IC 2-CH DIGITAL AMP	[M]
IC6601	C0HBB0000057	IC FL DRIVER	[M]
IC7001	MN6627954MA	IC SERVO PROCESSOR/DIGITAL SIGNAL PROCESSOR/DIGITAL FILTER D/A CONVERTER	[M]
IC7002	BA5948FPE2	IC 4 CH DRIVE	[M]
		TRANSISTORS	
Q1	B1CECC000003	TRANSISTOR	[M]
Q2	B1AAAC000016	TRANSISTOR	[M]
Q3	B1AAAD000015	TRANSISTOR	[M]
Q4	B1AAAD000015	TRANSISTOR	[M]
Q1003	B1AAGC000007	TRANSISTOR	[M]
Q1004	B1AAGC000007	TRANSISTOR	[M]
Q1005	B1AAGC000007	TRANSISTOR	[M]
Q1007	B1ABCF000176	TRANSISTOR	[M]
Q1017	B1AARC000003	TRANSISTOR	[M]
Q2142	B1ABCF000176	TRANSISTOR	[M]
Q2242	B1ABCF000176	TRANSISTOR	[M]
Q2311	B1ABGC000005	TRANSISTOR	[M]
Q2317	B1ABGC000005	TRANSISTOR	[M]
Q2341	B1ABGC000005	TRANSISTOR	[M]
Q2411	B1ABGC000005	TRANSISTOR	[M]
Q2417	B1ABGC000005	TRANSISTOR	[M]
Q2441	B1ABGC000005	TRANSISTOR	[M]
Q2511	B1GDCFJJ0047	TRANSISTOR	[M]
Q2601	B1AABC000003	TRANSISTOR	[M]
Q2606	B1GCCFJJ0016	TRANSISTOR	[M]
Q2803	B1GBCFJJ0051	TRANSISTOR	[M]
Q2901	B1ACKD000006	TRANSISTOR	[M]
Q2902	B1AACF000064	TRANSISTOR	[M]
Q2906	B1ABCF000176	TRANSISTOR	[M]
Q2907	B1ABCF000176	TRANSISTOR	[M]
Q2936	B1ACKD000006	TRANSISTOR	[M]
Q2937	B1GBCFJJ0051	TRANSISTOR	[M]
Q2942	B1ACKD000006	TRANSISTOR	[M]
Q2943	B1ABCF000176	TRANSISTOR	[M]
Q2948	B1ABCF000176	TRANSISTOR	[M]
Q2949	B1ABCF000176	TRANSISTOR	[M]
Q2950	B1ACKD000006	TRANSISTOR	[M]
Q2951	B1ACKD000006	TRANSISTOR	[M]
Q2952	B1GBCFLL0037	TRANSISTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
Q2957	B1GBCFLL0037	TRANSISTOR	[M]
Q2958	B1ACKD000006	TRANSISTOR	[M]
Q2959	B1GBCFLL0037	TRANSISTOR	[M]
Q2960	B1ACKD000006	TRANSISTOR	[M]
Q2978	B1GDCFJJ0047	TRANSISTOR	[M]
Q2980	B1GDCFJJ0047	TRANSISTOR	[M]
Q5101	B1CEGM000001	TRANSISTOR	[M]
Q5102	B1CEGM000001	TRANSISTOR	[M]
Q5103	B1ABCF000176	TRANSISTOR	[M]
Q5104	B1ABCF000176	TRANSISTOR	[M]
Q5108	B1ABCF000176	TRANSISTOR	[M]
Q5109	2SB0709AHL	TRANSISTOR	[M]
Q5110	B1AACF000064	TRANSISTOR	[M]
Q5111	B1BACG000023	TRANSISTOR	[M]
Q5112	B1BCCG000002	TRANSISTOR	[M]
Q5113	B1GDCFNA0001	TRANSISTOR	[M]
Q5114	B1ABCF000176	TRANSISTOR	[M]
Q5115	B1AAKD000014	TRANSISTOR	[M]
Q5153	B1ABCF000176	TRANSISTOR	[M]
Q5154	2SB0709AHL	TRANSISTOR	[M]
Q5173	B1ABCF000176	TRANSISTOR	[M]
Q5201	B1ABCF000176	TRANSISTOR	[M]
Q5202	B1ADCF000063	TRANSISTOR	[M]
Q5950	B1AAKD000014	TRANSISTOR	[M]
Q5951	2SB0621AHA	TRANSISTOR	[M]
Q5952	B1GACFJJ0018	TRANSISTOR	[M]
Q5953	B1AACF000064	TRANSISTOR	[M]
Q7601	B1ADCF000001	TRANSISTOR	[M]
		DIODES	
D1	B0CBAD000004	DIODE	[M]
D2	B0CBAD000004	DIODE	[M]
D3	B0CBAD000004	DIODE	[M]
D951	MA2C16500E	DIODE	[M]
D971	MA2C16500E	DIODE	[M]
D1003	B0ACCK000005	DIODE	[M]
D2191	B0ACCK000005	DIODE	[M]
D2241	B0ACCK000005	DIODE	[M]
D2583	B0BC9R000008	DIODE	[M]
D2601	B0BC5R000009	DIODE	[M]
D2602	B0CDBB000015	DIODE	[M]
D2677	B0BC7R500001	DIODE	[M]
D2801	B0ACCK000005	DIODE	[M]
D2803	B0ACCK000005	DIODE	[M]
D2811	B0ADCJ000020	DIODE	[M]
D2813	B0ACCK000005	DIODE	[M]
D2901	B0ADCC000002	DIODE	[M]
D2936	B0EAKM000117	DIODE	[M]
D2946	B0ADCJ000020	DIODE	[M]
D2950	B0ACCK000005	DIODE	[M]
D5101	B0BA01100004	DIODE	[M]
D5102	B0BA02600018	DIODE	[M]
D5103	B0BA3R900006	DIODE	[M]
D5104	B0BA01100004	DIODE	[M]
D5105	B0BA02400029	DIODE	[M]
D5107	B0BA01500003	DIODE	[M]

[illegible]	[illegible]	DIODE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
D5108	B0BA5R700008	DIODE	[M]
D5109	B0BA01100004	DIODE	[M]
D5121	B0EAKM000122	DIODE	[M]
D5122	B0EAKM000122	DIODE	[M]
D5123	B0EAKM000122	DIODE	[M]
D5124	B0EAKM000122	DIODE	[M]
D5125	B0AACK000004	DIODE	[M]
D5126	B0ACCK000005	DIODE	[M]
D5128	B0EAKM000122	DIODE	[M]
D5129	B0EAKM000122	DIODE	[M]
D5152	B0BA01900005	DIODE	[M]
D5950	B0EAMM000038	DIODE	[M]
D5951	B0EAMM000038	DIODE	[M]
D5952	B0EAMM000038	DIODE	[M]
D5953	B0EAMM000038	DIODE	[M]
D5954	B0EAKM000122	DIODE	[M]
D5955	B0EAKM000122	DIODE	[M]
D5956	B0EAKM000122	DIODE	[M]
D5957	B0EAKM000122	DIODE	[M]
D5958	B0EAKM000122	DIODE	[M]
D5959	B0EAKM000122	DIODE	[M]
D5960	B0BA02400030	DIODE	[M]
D5961	B0AACK000004	DIODE	[M]
D5962	B0AACK000004	DIODE	[M]
D5963	B0AACK000004	DIODE	[M]
D5964	B0BA6R800008	DIODE	[M]
D5965	B0AACK000004	DIODE	[M]
D5966	B0AACK000004	DIODE	[M]
D5986	B0AACK000004	DIODE	[M]
D5987	B0AACK000004	DIODE	[M]
D6458	B3AAA0000803	DIODE	[M]
D6635	B0BC5R600003	DIODE	[M]
D7650	MAZ80560ML	DIODE	[M]
		VARIABLE RESISTOR	
VR6491	EVEKE2F3524B	VR VOLUME JOG	[M]
		SWITCHES	
S951	K0J1BB000017	SW MODE	[M]
S952	K0J1BB000021	SW HALF	[M]
S971	K0J1BB000017	SW MODE	[M]
S972	K0J1BB000021	SW HALF	[M]
S975	K0J1BB000021	SW RECINH_F	[M]
S6101	EVQ21405RJ	SW POWER	[M]
S6102	EVQ21405RJ	SW SINGLE DISC CHANGE	[M]
S6103	EVQ21405RJ	SW OPEN/CLOSE	[M]
S6104	EVQ21405RJ	SW CD 1	[M]
S6105	EVQ21405RJ	SW CD 2	[M]
S6106	EVQ21405RJ	SW CD 3	[M]
S6107	EVQ21405RJ	SW CD 4	[M]
S6108	EVQ21405RJ	SW CD 5	[M]
S6201	EVQ21405RJ	SW DECK 2 OPEN	[M]
S6202	EVQ21405RJ	SW DISPLAY/DEMO	[M]
S6203	EVQ21405RJ	SW DECK 1/2	[M]
S6204	EVQ21405RJ	SW H.BASS	[M]

[illegible]	[illegible]	[illegible]	[illegible]

Ref. No.	Part No.	Part Name & Description	Remarks
S6205	EVQ21405RJ	SW FF	[M]
S6206	EVQ21405RJ	SW REW	[M]
S6207	EVQ21405RJ	SW DECK 1 OPEN	[M]
S6301	EVQ21405RJ	SW CD	[M]
S6302	EVQ21405RJ	SW TAPE	[M]
S6303	EVQ21405RJ	SW STOP	[M]
S6304	EVQ21405RJ	SW REC	[M]
S6305	EVQ21405RJ	SW TUNER/BAND	[M]
S6306	EVQ21405RJ	SW MUSIC PORT	[M]
S6308	EVQ21405RJ	SW MULTI DISC CHANGE	[M]
S7201	RSH1A048-A	SW RESET	[M]
		CONNECTORS	
CN971	K1MN10B00104	10P FFC CONNECTOR	[M]
CN1001	K1MN14B00058	14P FFC CONNECTOR	[M]
CN2801	K1MN17AA0004	17P CONNECTOR	[M]
CN2803	K1MN14A00049	14P FFC CONNECTOR	[M]
CN2805	K1MN14A00049	14P FFC CONNECTOR	[M]
CN2806	K1MN30AA0004	30P CONNECTOR	[M]
CN2808	K1KB12B00036	12P CONNECTOR	[M]
CN2809	K1KB12B00036	12P CONNECTOR	[M]
CN2810	K1KA02AA0186	2P FAN CONNECTOR	[M]
CN2951	K1MN10AA0003	10P FFC CONNECTOR	[M]
CN5102	K1KA12AA0424	12P CONNECTOR	[M]
CN5103	K1KA12AA0424	12P CONNECTOR	[M]
CN5950	K1KA09AA0319	9P CONNECTOR	[M]
CN5951	K1KA09AA0193	9P CONNECTOR	[M]
CN6601	K1MN30AA0004	30P CONNECTOR	[M]
CN7001	K1MN16B00154	16P CONNECTOR	[M]
CN7002	K1MN17B00032	17P CONNECTOR	[M]
CS1001	K1MY05AA0043	5P CONNECTOR	[M]
CS1002	K1MY05AA0043	5P CONNECTOR	[M]
		COILS & TRANSFORMERS	
L1	G0C1R2KA0029	AXIAL COIL	[M]
L2	G0CR47KA0029	RF CHOKE COIL	[M]
L1001	G0C470JA0052	RF CHOKE COIL	[M]
L1002	G2ZZ00000024	BIAS OCS COIL	[M]
L2601	G2A411C00001	AM COIL	[M]
L2602	G2BPC0000016	OSCILLATOR COIL	[M]
L5101	J0JKB0000037	FILTER	[M]
L5102	J0JKB0000037	FILTER	[M]
L5301	G0C220Z00002	COIL	[M]
L5601	G0B9R5K00001	COIL	[M]
L5602	G0B9R5K00001	COIL	[M]
L5950	ELF15N035AN	LINE FILTER	[M]
T5950	G4CYAYY00052	TRANSFORMER	[M]
T5951	RTP1H3E002	BACK-UP TRANSFORMER	[M]
		COMPONENT COMBINATIONS	
Z971	RGSD12A1445T	RADA RESISTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
Z2602	G2BAD0000003	AM IFT	[M]
Z5950	ERZV10V511CS	ZENER	[M]
Z6481	B3RAB0000025	REMOTE SENSOR	[M]
		CERAMIC FILTERS	
CF2601	J0B1075AA014	FM CERAMIC FILTER	[M]
CF2602	J0B1075AA014	FM CERAMIC FILTER	[M]
		RELAY	
RL5950	K6B1AEA00015	POWER RELAY	[M]
		OSCILLATORS	
X2602	H3F1065A0002	DIELECTRIC RESONATOR	[M]
X2603	H0H720400007	CRYSTAL OSCILLATOR	[M]
X2801	H0A327200115	CRYSTAL OSCILLATOR	[M]
X2802	H2B100500004	CERAMIC RESONATOR	[M]
X5201	H2A415300001	OSCILLATOR	[M]
X5202	H2A375300003	OSCILLATOR	[M]
X7201	H2B169500005	CRYSTAL	[M]
		DISPLAY TUBE	
FL6602	A2BD00000141	FL	[M]
		FUSE	
F1	K5D312BLA015	FUSE	[M]
		FUSE HOLDERS	
FC1	EYF52BCY	FUSE CLIP	[M]
FC2	EYF52BCY	FUSE CLIP	[M]
		FUSE PROTECTORS	
FP5920	K5G702A00009	FUSE	[M]
FP5940	K5G702Z00004	FUSE PROTECTOR	[M]
FP5950	K5G402A00025	FUSE PROTECTOR	[M]
		HOLDERS	
H5104	K1YF09000001	9P WIRE HOLDER	[M]
H6555	K1YZ09000002	9P CABLE HOLDER	[M]
		JACKS	
JK2601	K4BC04B00105	JK ANTENNA	[M]
JK5101	K4AC04B00014	JK TERMINAL	[M]
JK5950	K2AA2B000011	JK AC INLET	[M]
JK6551	K2HC103A0024	JK HP	[M]
JK6751	K2HC1YYA0002	JK MUSIC PORT	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		EARTH TERMINAL	
E5101	K4CZ01000027	EARTH LUG	[M]
E5102	K4CZ01000027	EARTH LUG	[M]
E5103	K4CZ01000027	EARTH LUG	[M]
		WIRES	
W1002	RWJ0102050CK	MAIN TO MECHA MOTOR	[M]
W5104	REXX0325	9P FLAT WIRE	[M]
W6555	REXX0324	9P FLAT WIRE	[M]
		PACKING MATERIALS	
P1	RPGX1528	PACKING CASE	[M]
P2	RPNX0349-1	POLYFOAM	[M]
P3	RPFX0007-1	MIRAMAT BAG	[M]
		ACCESSORIES	
A1	N2QAHB000065	REMOTE CONTROL	[M]
A1-1	RKK-HTR0283H	R/C BATTERY COVER	[M]
A2	K2CA2CA00027	AC CORD	[M]
A3	RQTV0068-1K	O/I BOOK (Co)	[M]
A4	N1DAAAA00001	AM LOOP ANTENNA	[M]
A5	RSA0006-L	FM ANTENNA WIRE	[M]
		RESISTORS	
R1	D0AE102JA048	1K 1/4W	[M]
R1	D0AE104JA048	100K 1/4W	[M]
R2	D0AE101JA048	100 1/4W	[M]
R2	D0AE104JA048	100K 1/4W	[M]
R3	D0AE221JA048	220 1/4W	[M]
R4	D0AE104JA048	100K 1/4W	[M]
R5	ERDS2TJ564T	560K 1/4W	[M]
R6	D0AE391JA048	390 1/4W	[M]
R7	D0AE272JA048	2.7K 1/4W	[M]
R8	ERDS2TJ684T	680K 1/4W	[M]
R9	D0AE391JA048	390 1/4W	[M]
R10	D0AE391JA048	390 1/4W	[M]
R11	ERDS2TJ684T	680K 1/4W	[M]
R952	ERDS2TJ821T	820 1/4W	[M]
R953	ERDS2TJ393T	39K 1/4W	[M]
R972	ERDS2TJ821T	820 1/4W	[M]
R973	ERDS2TJ393T	39K 1/4W	[M]
R1002	ERJ3GEY0R00V	0 1/16W	[M]
R1003	ERJ3GEYJ103V	10K 1/16W	[M]
R1004	D0GB152JA007	1.5K 1/16W	[M]
R1005	D0GB472JA041	4.7K 1/16W	[M]
R1007	ERD25FVJ4R7T	4.7 1/4W	[M]
R1009	D0GB183JA007	18K 1/16W	[M]
R1010	D0GB183JA007	18K 1/16W	[M]
R1011	ERJ3GEYJ822V	8.2K 1/16W	[M]
R1012	D0GB472JA041	4.7K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R1013	D0GB472JA041	4.7K 1/16W	[M]
R1014	D0GB472JA041	4.7K 1/16W	[M]
R1015	D0GB470JA008	47 1/16W	[M]
R1016	D0GB470JA008	47 1/16W	[M]
R1017	ERJ3GEYJ822V	8.2K 1/16W	[M]
R1018	D0GB392JA007	3.9K 1/16W	[M]
R1019	D0GB392JA007	3.9K 1/16W	[M]
R1020	ERJ3GEY0R00V	0 1/16W	[M]
R1022	ERJ3GEYJ103V	10K 1/16W	[M]
R1024	ERJ3GEY0R00V	0 1/16W	[M]
R1025	ERJ3GEY0R00V	0 1/16W	[M]
R1026	ERJ3GEYJ102V	1K 1/16W	[M]
R1027	ERJ3GEY0R00V	0 1/16W	[M]
R1028	ERJ3GEYJ822V	8.2K 1/16W	[M]
R1029	D0GB475JA007	4.7M 1/16W	[M]
R1030	D0GB101JA007	100 1/16W	[M]
R1031	D0GB273JA007	27K 1/16W	[M]
R1032	ERJ3GEYJ103V	10K 1/16W	[M]
R1035	ERJ3GEYJ103V	10K 1/16W	[M]
R1040	ERJ3GEY0R00V	0 1/16W	[M]
R1049	ERJ3GEY0R00V	0 1/16W	[M]
R1050	ERJ3GEY0R00V	0 1/16W	[M]
R1055	D0GB222JA041	2.2K 1/16W	[M]
R1057	D0GB222JA041	2.2K 1/16W	[M]
R1060	D0GB391JA041	390 1/16W	[M]
R1084	D0GB222JA041	2.2K 1/16W	[M]
R1085	D0GB473JA041	47K 1/16W	[M]
R1086	D0GB222JA041	2.2K 1/16W	[M]
R1087	D0GB473JA041	47K 1/16W	[M]
R1090	D0GB221JA041	220 1/16W	[M]
R1091	ERJ3GEY0R00V	0 1/16W	[M]
R1092	ERJ3GEY0R00V	0 1/16W	[M]
R1097	ERJ3GEYJ103V	10K 1/16W	[M]
R1098	ERJ3GEYJ103V	10K 1/16W	[M]
R1099	ERJ3GEY0R00V	0 1/16W	[M]
R1100	ERJ3GEY0R00V	0 1/16W	[M]
R1101	ERJ3GEY0R00V	0 1/16W	[M]
R1102	ERJ3GEYJ103V	10K 1/16W	[M]
R2102	D0GB332JA007	3.3K 1/16W	[M]
R2104	D0GB392JA007	3.9K 1/16W	[M]
R2111	D0GB222JA041	2.2K 1/16W	[M]
R2112	D0GB332JA007	3.3K 1/16W	[M]
R2121	D0GB332JA007	3.3K 1/16W	[M]
R2122	D0GB332JA007	3.3K 1/16W	[M]
R2131	D0GB332JA007	3.3K 1/16W	[M]
R2132	D0GB332JA007	3.3K 1/16W	[M]
R2145	ERJ3GEYJ102V	1K 1/16W	[M]
R2146	ERJ3GEYJ102V	1K 1/16W	[M]
R2151	ERJ3GEY0R00V	0 1/16W	[M]
R2172	D0GB223JA041	22K 1/16W	[M]
R2173	D0GB472JA041	4.7K 1/16W	[M]
R2181	D0GB471JA041	470 1/16W	[M]
R2182	ERJ3GEY0R00V	0 1/16W	[M]
R2183	ERJ3GEYJ102V	1K 1/16W	[M]
R2193	D0GB472JA041	4.7K 1/16W	[M]
R2194	D0GB104JA007	100K 1/16W	[M]
R2195	ERJ3GEYJ103V	10K 1/16W	[M]

R21[illegible]	ERJ3GEYJ103V	10K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R2196	ERJ3GEYJ103V	10K 1/16W	[M]
R2202	D0GB332JA007	3.3K 1/16W	[M]
R2204	D0GB392JA007	3.9K 1/16W	[M]
R2211	D0GB222JA041	2.2K 1/16W	[M]
R2212	D0GB332JA007	3.3K 1/16W	[M]
R2221	D0GB332JA007	3.3K 1/16W	[M]
R2222	D0GB332JA007	3.3K 1/16W	[M]
R2231	D0GB332JA007	3.3K 1/16W	[M]
R2232	D0GB332JA007	3.3K 1/16W	[M]
R2245	ERJ3GEYJ102V	1K 1/16W	[M]
R2246	ERJ3GEYJ102V	1K 1/16W	[M]
R2247	D0GB104JA007	100K 1/16W	[M]
R2248	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2251	ERJ3GEY0R00V	0 1/16W	[M]
R2271	D0GB153JA007	15K 1/16W	[M]
R2273	D0GB472JA041	4.7K 1/16W	[M]
R2281	D0GB471JA041	470 1/16W	[M]
R2282	ERJ3GEY0R00V	0 1/16W	[M]
R2283	D0GB104JA007	100K 1/16W	[M]
R2301	D0GB153JA007	15K 1/16W	[M]
R2311	D0GB471JA041	470 1/16W	[M]
R2312	ERJ3GEYJ103V	10K 1/16W	[M]
R2313	D0GB104JA007	100K 1/16W	[M]
R2314	ERJ3GEY0R00V	0 1/16W	[M]
R2315	D0GB563JA007	56K 1/16W	[M]
R2316	D0GB222JA041	2.2K 1/16W	[M]
R2317	ERJ3GEYJ103V	10K 1/16W	[M]
R2318	D0GB104JA007	100K 1/16W	[M]
R2321	ERJ3GEY0R00V	0 1/16W	[M]
R2326	ERJ3GEY0R00V	0 1/16W	[M]
R2328	D0GB153JA007	15K 1/16W	[M]
R2329	ERJ3GEYJ103V	10K 1/16W	[M]
R2330	D0GB392JA007	3.9K 1/16W	[M]
R2341	D0GB330JA007	33 1/16W	[M]
R2342	D0GB330JA007	33 1/16W	[M]
R2343	D0GB330JA007	33 1/16W	[M]
R2344	D0GB330JA007	33 1/16W	[M]
R2345	D0GB152JA007	1.5K 1/16W	[M]
R2346	D0GB332JA007	3.3K 1/16W	[M]
R2347	D0GB1R0JA007	1 1/16W	[M]
R2351	D0GB330JA007	33 1/16W	[M]
R2352	D0GB330JA007	33 1/16W	[M]
R2353	D0GB330JA007	33 1/16W	[M]
R2354	D0GB330JA007	33 1/16W	[M]
R2355	D0GB274JA007	270K 1/16W	[M]
R2356	D0GB184JA007	180K 1/16W	[M]
R2357	D0GB104JA007	100K 1/16W	[M]
R2401	D0GB153JA007	15K 1/16W	[M]
R2411	D0GB471JA041	470 1/16W	[M]
R2412	ERJ3GEYJ103V	10K 1/16W	[M]
R2413	D0GB104JA007	100K 1/16W	[M]
R2414	ERJ3GEY0R00V	0 1/16W	[M]
R2415	D0GB563JA007	56K 1/16W	[M]
R2416	D0GB222JA041	2.2K 1/16W	[M]
R2417	ERJ3GEYJ103V	10K 1/16W	[M]
R2418	D0GB104JA007	100K 1/16W	[M]
R2430	ERJ3GEY0R00V	0 1/16W	[M]

R2450	ERJ3GEY0R00V	0 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R2431	ERJ3GEY0R00V	0 1/16W	[M]
R2434	ERJ3GEY0R00V	0 1/16W	[M]
R2435	ERJ3GEYJ103V	10K 1/16W	[M]
R2436	D0GB392JA007	3.9K 1/16W	[M]
R2437	D0GB153JA007	15K 1/16W	[M]
R2441	D0GB330JA007	33 1/16W	[M]
R2442	D0GB330JA007	33 1/16W	[M]
R2443	D0GB330JA007	33 1/16W	[M]
R2444	D0GB330JA007	33 1/16W	[M]
R2445	D0GB152JA007	1.5K 1/16W	[M]
R2446	D0GB332JA007	3.3K 1/16W	[M]
R2447	D0GB1R0JA007	1 1/16W	[M]
R2451	D0GB330JA007	33 1/16W	[M]
R2452	D0GB330JA007	33 1/16W	[M]
R2453	D0GB330JA007	33 1/16W	[M]
R2454	D0GB330JA007	33 1/16W	[M]
R2455	D0GB274JA007	270K 1/16W	[M]
R2456	D0GB184JA007	180K 1/16W	[M]
R2457	D0GB104JA007	100K 1/16W	[M]
R2509	D0GB561JA007	560 1/16W	[M]
R2510	D0AF221JA039	220 1/4W	[M]
R2511	D0GB222JA041	2.2K 1/16W	[M]
R2512	D0GB104JA007	100K 1/16W	[M]
R2584	D0GB334JA007	330K 1/16W	[M]
R2585	D0GB334JA007	330K 1/16W	[M]
R2586	ERJ3GEYJ122V	1.2K 1/16W	[M]
R2587	ERJ3GEYJ122V	1.2K 1/16W	[M]
R2601	ERJ3GEY0R00V	0 1/16W	[M]
R2602	D0GB472JA041	4.7K 1/16W	[M]
R2603	D0GB271JA007	270 1/16W	[M]
R2604	ERJ3GEYJ102V	1K 1/16W	[M]
R2605	D0GB471JA041	470 1/16W	[M]
R2606	D0GB474JA041	470K 1/16W	[M]
R2607	D0GB331JA007	330 1/16W	[M]
R2610	ERJ3GEYJ102V	1K 1/16W	[M]
R2611	D0GB391JA041	390 1/16W	[M]
R2612	D0GB104JA007	100K 1/16W	[M]
R2613	ERJ3GEYJ103V	10K 1/16W	[M]
R2614	D0GB562JA007	5.6K 1/16W	[M]
R2615	D0GB561JA007	560 1/16W	[M]
R2616	ERJ3GEYJ102V	1K 1/16W	[M]
R2617	D0GB473JA041	47K 1/16W	[M]
R2618	D0GB332JA007	3.3K 1/16W	[M]
R2619	D0GB332JA007	3.3K 1/16W	[M]
R2620	D0GB473JA041	47K 1/16W	[M]
R2621	D0GB223JA041	22K 1/16W	[M]
R2622	D0GB272JA007	2.7K 1/16W	[M]
R2623	D0GB683JA007	68K 1/16W	[M]
R2624	D0GB270JA007	27 1/16W	[M]
R2625	D0GB471JA041	470 1/16W	[M]
R2626	ERJ3GEYJ102V	1K 1/16W	[M]
R2627	D0GB471JA041	470 1/16W	[M]
R2628	ERJ3GEYJ820V	82 1/16W	[M]
R2629	D0GB273JA007	27K 1/16W	[M]
R2630	ERJ3GEYJ103V	10K 1/16W	[M]
R2631	D0GB121JA007	120 1/16W	[M]
R2632	ERJ3GEYJ103V	10K 1/16W	[M]

[illegible]	[illegible]	[illegible]	[illegible]

Ref. No.	Part No.	Part Name & Description	Remarks
R2633	ERJ3GEYJ102V	1K 1/16W	[M]
R2634	D0GB471JA041	470 1/16W	[M]
R2635	ERJ3GEYJ102V	1K 1/16W	[M]
R2636	ERJ3GEYJ102V	1K 1/16W	[M]
R2637	ERJ3GEYJ102V	1K 1/16W	[M]
R2638	D0GB332JA007	3.3K 1/16W	[M]
R2641	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2642	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2643	D0GB223JA041	22K 1/16W	[M]
R2644	D0GB121JA007	120 1/16W	[M]
R2645	D0GB104JA007	100K 1/16W	[M]
R2646	D0GB104JA007	100K 1/16W	[M]
R2651	ERJ3GEYJ820V	82 1/16W	[M]
R2652	ERJ3GEY0R00V	0 1/16W	[M]
R2671	ERJ3GEYJ103V	10K 1/16W	[M]
R2672	ERJ3GEYJ103V	10K 1/16W	[M]
R2673	D0GB473JA041	47K 1/16W	[M]
R2674	D0GB473JA041	47K 1/16W	[M]
R2675	D0GB472JA041	4.7K 1/16W	[M]
R2676	ERJ3GEYJ103V	10K 1/16W	[M]
R2677	D0C1121JA020	120 1W	[M]
R2701	ERJ3GEYJ102V	1K 1/16W	[M]
R2702	ERJ3GEYJ102V	1K 1/16W	[M]
R2703	D0GB224JA007	220K 1/16W	[M]
R2704	D0GB224JA007	220K 1/16W	[M]
R2705	D0GB332JA007	3.3K 1/16W	[M]
R2706	D0GB332JA007	3.3K 1/16W	[M]
R2801	ERJ3GEYJ103V	10K 1/16W	[M]
R2802	D0GB101JA007	100 1/16W	[M]
R2803	ERJ3GEYJ103V	10K 1/16W	[M]
R2810	D0GB223JA041	22K 1/16W	[M]
R2817	D0GB104JA007	100K 1/16W	[M]
R2818	D0GB104JA007	100K 1/16W	[M]
R2819	D0GB104JA007	100K 1/16W	[M]
R2820	D0GB104JA007	100K 1/16W	[M]
R2823	ERJ3GEYJ103V	10K 1/16W	[M]
R2824	ERJ3GEYJ103V	10K 1/16W	[M]
R2830	D0GB104JA007	100K 1/16W	[M]
R2831	D0GB104JA007	100K 1/16W	[M]
R2832	D0GB104JA007	100K 1/16W	[M]
R2833	D0GB104JA007	100K 1/16W	[M]
R2841	ERJ3GEYJ103V	10K 1/16W	[M]
R2842	ERJ3GEYJ103V	10K 1/16W	[M]
R2843	ERJ3GEYJ102V	1K 1/16W	[M]
R2844	ERJ3GEYJ103V	10K 1/16W	[M]
R2845	ERJ3GEYJ103V	10K 1/16W	[M]
R2846	D0GB472JA041	4.7K 1/16W	[M]
R2847	D0GB101JA007	100 1/16W	[M]
R2848	D0GB101JA007	100 1/16W	[M]
R2849	ERJ3GEYJ102V	1K 1/16W	[M]
R2851	D0GB473JA041	47K 1/16W	[M]
R2852	D0GB101JA007	100 1/16W	[M]
R2853	D0GB101JA007	100 1/16W	[M]
R2854	D0GB473JA041	47K 1/16W	[M]
R2855	D0GB473JA041	47K 1/16W	[M]
R2856	D0GB473JA041	47K 1/16W	[M]
R2857	D0GB473JA041	47K 1/16W	[M]

[illegible]	[illegible]	47K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R2858	D0GB101JA007	100 1/16W	[M]
R2859	D0GB101JA007	100 1/16W	[M]
R2860	D0GB101JA007	100 1/16W	[M]
R2861	D0GB101JA007	100 1/16W	[M]
R2862	D0GB101JA007	100 1/16W	[M]
R2863	D0GB473JA041	47K 1/16W	[M]
R2864	D0GB101JA007	100 1/16W	[M]
R2865	D0GB473JA041	47K 1/16W	[M]
R2866	D0GB473JA041	47K 1/16W	[M]
R2867	D0GB104JA007	100K 1/16W	[M]
R2871	D0GB223JA041	22K 1/16W	[M]
R2873	D0GB223JA041	22K 1/16W	[M]
R2874	D0GB472JA041	4.7K 1/16W	[M]
R2881	D0GB221JA041	220 1/16W	[M]
R2882	D0GB106JA007	10M 1/16W	[M]
R2883	D0GB334JA007	330K 1/16W	[M]
R2886	D0GB105JA007	1M 1/16W	[M]
R2894	D0GB473JA041	47K 1/16W	[M]
R2901	ERJ3GEYJ103V	10K 1/16W	[M]
R2902	ERDS1FVJ330T	33 1/2W	[M]
R2907	ERJ3GEYJ102V	1K 1/16W	[M]
R2908	D0GB331JA007	330 1/16W	[M]
R2909	D0GB222JA041	2.2K 1/16W	[M]
R2910	D0GB331JA007	330 1/16W	[M]
R2912	D0GB472JA041	4.7K 1/16W	[M]
R2914	D0GB472JA041	4.7K 1/16W	[M]
R2916	D0GB472JA041	4.7K 1/16W	[M]
R2918	ERJ3GEYJ103V	10K 1/16W	[M]
R2919	D0GB472JA041	4.7K 1/16W	[M]
R2920	D0GB472JA041	4.7K 1/16W	[M]
R2921	D0GB472JA041	4.7K 1/16W	[M]
R2922	ERJ3GEYJ103V	10K 1/16W	[M]
R2923	ERJ3GEY0R00V	0 1/16W	[M]
R2924	ERJ3GEYJ103V	10K 1/16W	[M]
R2925	D0GB472JA041	4.7K 1/16W	[M]
R2927	D0GB472JA041	4.7K 1/16W	[M]
R2928	ERJ3GEYJ103V	10K 1/16W	[M]
R2929	ERJ3GEYJ103V	10K 1/16W	[M]
R2930	ERJ3GEYJ103V	10K 1/16W	[M]
R2931	ERJ3GEYJ103V	10K 1/16W	[M]
R2936	ERJ3GEYJ102V	1K 1/16W	[M]
R2937	ERJ3GEYJ103V	10K 1/16W	[M]
R2939	D0GB473JA041	47K 1/16W	[M]
R2940	ERJ3GEYJ824V	820K 1/16W	[M]
R2941	ERJ3GEYJ103V	10K 1/16W	[M]
R2942	D0GB562JA007	5.6K 1/16W	[M]
R2943	ERJ3GEYJ103V	10K 1/16W	[M]
R2944	D0GB472JA041	4.7K 1/16W	[M]
R2945	ERJ3GEYJ103V	10K 1/16W	[M]
R2946	D0GB563JA007	56K 1/16W	[M]
R2947	D0AF270JA039	27 1/4W	[M]
R2948	D0GB101JA007	100 1/16W	[M]
R2949	D0GB473JA041	47K 1/16W	[M]
R2950	D0GB474JA041	470K 1/16W	[M]
R2951	D0GB474JA041	470K 1/16W	[M]
R2952	ERJ3GEYJ102V	1K 1/16W	[M]
R2953	ERJ3GEYJ103V	10K 1/16W	[M]

[illegible]	[illegible]	[illegible]	[illegible]

Ref. No.	Part No.	Part Name & Description	Remarks
R2954	ERJ3GEYJ103V	10K 1/16W	[M]
R2955	D0GB274JA007	270K 1/16W	[M]
R2956	D0GB274JA007	270K 1/16W	[M]
R2957	ERJ3GEYJ102V	1K 1/16W	[M]
R2958	D0GB223JA041	22K 1/16W	[M]
R2959	ERJ3GEYJ102V	1K 1/16W	[M]
R2960	D0GB223JA041	22K 1/16W	[M]
R2965	D0GB472JA041	4.7K 1/16W	[M]
R2966	D0GB472JA041	4.7K 1/16W	[M]
R5101	ERJ3GEYJ103V	10K 1/16W	[M]
R5103	D0C1103JA020	10K 1W	[M]
R5105	ERJ3GEYJ103V	10K 1/16W	[M]
R5106	D0GB223JA041	22K 1/16W	[M]
R5107	D0GB561JA007	560 1/16W	[M]
R5108	D0GB470JA008	47 1/16W	[M]
R5109	ERJ3GEYJ102V	1K 1/16W	[M]
R5110	D0GB222JA041	2.2K 1/16W	[M]
R5111	D0GB104JA007	100K 1/16W	[M]
R5112	D0GB473JA041	47K 1/16W	[M]
R5113	D0GB473JA041	47K 1/16W	[M]
R5114	ERJ3GEYJ1R8V	1.8 1/16W	[M]
R5123	D0C14R7JA020	4.7 1W	[M]
R5126	ERJ3GEYJ102V	1K 1/16W	[M]
R5127	D0GB471JA041	470 1/16W	[M]
R5130	D0GB151JA007	150 1/16W	[M]
R5131	ERDS1FVJ222T	2.2K 1/2W	[M]
R5132	D0AF331JA039	330 1/4W	[M]
R5133	ERJ3GEYJ103V	10K 1/16W	[M]
R5134	ERJ3GEYJ122V	1.2K 1/16W	[M]
R5135	D0AE2R2JA048	2.2 1/4W	[M]
R5136	D0AE2R2JA048	2.2 1/4W	[M]
R5137	D0AE2R2JA048	2.2 1/4W	[M]
R5138	ERJ8GEYJ100V	10 1/8W	[M]
R5139	ERJ8GEYJ100V	10 1/8W	[M]
R5144	D0AF120JA039	12 1/4W	[M]
R5146	D0GB562JA007	5.6K 1/16W	[M]
R5147	D0AF2R2JA039	2.2 1/4W	[M]
R5148	D0GB562JA007	5.6K 1/16W	[M]
R5149	ERJ3GEYJ102V	1K 1/16W	[M]
R5150	D0GB224JA007	220K 1/16W	[M]
R5151	D0GB154JA007	150K 1/16W	[M]
R5152	ERJ3GEY0R00V	0 1/16W	[M]
R5153	ERJ3GEYJ102V	1K 1/16W	[M]
R5154	D0GB101JA007	100 1/16W	[M]
R5173	ERJ3GEYJ102V	1K 1/16W	[M]
R5174	ERJ3GEY0R00V	0 1/16W	[M]
R5201	ERJ3GEYJ102V	1K 1/16W	[M]
R5202	D0GB104JA007	100K 1/16W	[M]
R5203	ERJ3GEYJ103V	10K 1/16W	[M]
R5204	D0GB104JA007	100K 1/16W	[M]
R5205	D0GB104JA007	100K 1/16W	[M]
R5206	D0GB105JA007	1M 1/16W	[M]
R5207	ERJ3GEYJ682V	6.8K 1/16W	[M]
R5209	D0GB100JA007	10 1/16W	[M]
R5210	D0GB271JA007	270 1/16W	[M]
R5301	D0GB562JA007	5.6K 1/16W	[M]
R5302	D0GB562JA007	5.6K 1/16W	[M]

[illegible]	[illegible]	[illegible]	[illegible]

Ref. No.	Part No.	Part Name & Description	Remarks
R5303	D0GB562JA007	5.6K 1/16W	[M]
R5304	D0GB562JA007	5.6K 1/16W	[M]
R5305	ERG1SJ220E	22 1W	[M]
R5306	ERG1SJ220E	22 1W	[M]
R5307	ERJ8GEYJ100V	10 1/8W	[M]
R5308	ERJ8GEYJ100V	10 1/8W	[M]
R5313	D0GB154JA007	150K 1/16W	[M]
R5317	ERJ3GEYJ103V	10K 1/16W	[M]
R5413	D0GB104JA007	100K 1/16W	[M]
R5514	ERJ3GEY0R00V	0 1/16W	[M]
R5951	D0AE332JA048	3.3K 1/4W	[M]
R5952	D0AE472JA048	4.7K 1/4W	[M]
R5953	D0AE151JA048	150 1/4W	[M]
R5957	D0AE103JA048	10K 1/4W	[M]
R5958	D0AE103JA048	10K 1/4W	[M]
R5960	D0AE472JA048	4.7K 1/4W	[M]
R5961	D0AE151JA048	150 1/4W	[M]
R5963	D0AF820JA039	82 1/4W	[M]
R6102	ERJ3GEYJ102V	1K 1/16W	[M]
R6103	D0GB222JA041	2.2K 1/16W	[M]
R6104	D0GB182JA007	1.8K 1/16W	[M]
R6105	D0GB222JA041	2.2K 1/16W	[M]
R6106	D0GB272JA007	2.7K 1/16W	[M]
R6107	D0GB472JA041	4.7K 1/16W	[M]
R6108	ERJ3GEYJ682V	6.8K 1/16W	[M]
R6109	ERJ3GEYJ103V	10K 1/16W	[M]
R6110	D0GB223JA041	22K 1/16W	[M]
R6199	ERJ3GEYJ103V	10K 1/16W	[M]
R6202	ERJ3GEYJ102V	1K 1/16W	[M]
R6203	D0GB222JA041	2.2K 1/16W	[M]
R6204	D0GB182JA007	1.8K 1/16W	[M]
R6205	D0GB222JA041	2.2K 1/16W	[M]
R6206	D0GB272JA007	2.7K 1/16W	[M]
R6207	D0GB472JA041	4.7K 1/16W	[M]
R6208	D0GB393JA007	39K 1/16W	[M]
R6302	ERJ3GEYJ102V	1K 1/16W	[M]
R6303	D0GB222JA041	2.2K 1/16W	[M]
R6304	D0GB182JA007	1.8K 1/16W	[M]
R6305	D0GB222JA041	2.2K 1/16W	[M]
R6306	D0GB272JA007	2.7K 1/16W	[M]
R6307	D0GB472JA041	4.7K 1/16W	[M]
R6308	ERJ3GEYJ682V	6.8K 1/16W	[M]
R6399	ERJ3GEYJ103V	10K 1/16W	[M]
R6458	D0GB472JA041	4.7K 1/16W	[M]
R6481	ERJ3GEY0R00V	0 1/16W	[M]
R6491	D0GB473JA041	47K 1/16W	[M]
R6492	D0GB473JA041	47K 1/16W	[M]
R6493	ERJ3GEYJ103V	10K 1/16W	[M]
R6601	D0GB471JA041	470 1/16W	[M]
R6603	D0GB221JA041	220 1/16W	[M]
R6604	D0GB221JA041	220 1/16W	[M]
R6605	D0GB823JA007	82K 1/16W	[M]
R6631	ERD2FCVG470T	47 1/4W	[M]
R6632	ERD2FCVG470T	47 1/4W	[M]
R6751	D0GB332JA007	3.3K 1/16W	[M]
R6752	D0GB152JA007	1.5K 1/16W	[M]
R6753	D0GB332JA007	3.3K 1/16W	[M]

[illegible]	[illegible]	[illegible]	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R6754	D0GB152JA007	1.5K 1/16W	[M]
R7111	ERJ3GEYJ103V	10K 1/16W	[M]
R7211	ERJ3GEYJ823V	82K 1/16W	[M]
R7212	ERJ3GEYJ821V	820 1/16W	[M]
R7214	ERJ3GEYJ471V	470 1/16W	[M]
R7217	ERJ3GEYJ102V	1K 1/16W	[M]
R7218	ERJ3GEYJ102V	1K 1/16W	[M]
R7220	ERJ3GEYJ105V	1M 1/16W	[M]
R7221	ERJ3GEYJ101V	100 1/16W	[M]
R7253	ERJ3GEYJ100V	10 1/16W	[M]
R7254	ERJ3GEYJ102V	1K 1/16W	[M]
R7315	ERJ3GEYJ332V	3.3K 1/16W	[M]
R7323	ERJ3GEYJ332V	3.3K 1/16W	[M]
R7325	ERJ3GEYJ331V	330 1/16W	[M]
R7327	ERJ3GEYJ102V	1K 1/16W	[M]
R7328	ERJ3GEYJ103V	10K 1/16W	[M]
R7329	ERJ3GEYJ102V	1K 1/16W	[M]
R7330	ERJ3GEYJ562V	5.6K 1/16W	[M]
R7331	ERJ3GEYJ223V	22K 1/16W	[M]
R7332	ERJ3GEYJ102V	1K 1/16W	[M]
R7335	ERJ3GEYJ101V	100 1/16W	[M]
R7336	ERJ3GEYJ100V	10 1/16W	[M]
R7339	ERJ3GEYJ102V	1K 1/16W	[M]
R7349	ERJ3GEYJ183V	18K 1/16W	[M]
R7601	ERJ3GEYJ4R7V	4.7 1/16W	[M]
R7650	ERJ3GEYJ5R6V	5.6 1/16W	[M]
K5101	B0EAKM000122	RECTIFIER	[M]
		CHIP JUMPERS	
W2501	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2503	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2506	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2508	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2510	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2511	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2512	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2513	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2514	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2517	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2518	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2520	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2523	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2525	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2526	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2530	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2531	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2532	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2534	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2535	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2536	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2537	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2539	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2540	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2542	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2543	ERJ3GEY0R00V	CHIP JUMPER	[M]

[illegible]	ERJ3GEY0R00V	CHIP JUMPER	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
W2544	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2545	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2546	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2547	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2548	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2549	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2550	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2552	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2553	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2554	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2555	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2556	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2557	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2558	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2559	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2560	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2561	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2563	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2565	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2566	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2567	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2568	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2569	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2570	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2571	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2572	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2573	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2575	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2576	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2577	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2919	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5501	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5504	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5505	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5506	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5507	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5508	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5509	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5511	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6501	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6502	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6503	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6504	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6505	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7001	ERJ6GEY0R00V	CHIP JUMPER	[M]
W7002	ERJ6GEY0R00V	CHIP JUMPER	[M]
W7003	ERJ6GEY0R00V	CHIP JUMPER	[M]
W7004	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7005	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7006	ERJ6GEY0R00V	CHIP JUMPER	[M]
W7007	ERJ6GEY0R00V	CHIP JUMPER	[M]
W7008	ERJ6GEY0R00V	CHIP JUMPER	[M]
W7009	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7010	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7011	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7012	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7013	ERJ3GEY0R00V	CHIP JUMPER	[M]

W7010	ERJ3GEY0R00V	CHIP JUMPER	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
W7014	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7015	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7016	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7017	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7018	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7019	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7020	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7021	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7022	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7023	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7024	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7025	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7026	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7027	ERJ3GEY0R00V	CHIP JUMPER	[M]
W7028	ERJ3GEY0R00V	CHIP JUMPER	[M]
		CAPACITORS	
C1	F1D1H5R6A017	5.6P 50V	[M]
C2	F1D1H102A029	1000P 50V	[M]
C3	F1D1H2R2A017	2.2P 50V	[M]
C4	F1D1H181A012	180P 50V	[M]
C5	F1D1H5R6A017	5.6P 50V	[M]
C6	F1D1H3R3A017	3.3P 50V	[M]
C7	F1D1H4R7A017	4.7P 50V	[M]
C8	F1D1H3R3A017	3.3P 50V	[M]
C9	F1D1H2R2A017	2.2P 50V	[M]
C10	F1D1H180A015	18P 50V	[M]
C11	F1D1H102A029	1000P 50V	[M]
C1002	ECEA1HKN2R2B	2.2 50V	[M]
C1006	ECA1HAK010XB	1 50V	[M]
C1007	F0A2A472A034	4700P 100V	[M]
C1008	ECA1HAK010XB	1 50V	[M]
C1009	ECA1CAK470XB	47 16V	[M]
C1010	ECA1EAM101XB	100 25V	[M]
C1011	ECQV1H473JL3	0.047 50V	[M]
C1012	F1H1H102A219	1000P 50V	[M]
C1013	F1H1H102A219	1000P 50V	[M]
C1014	F1H1H102A219	1000P 50V	[M]
C1015	F1H1H102A219	1000P 50V	[M]
C1016	F1H1H222A013	2200P 50V	[M]
C1017	F1H1H222A013	2200P 50V	[M]
C1018	F1H1H332A013	3300P 50V	[M]
C1019	F1H1H102A219	1000P 50V	[M]
C1020	F1H1H471A219	470P 50V	[M]
C1021	F1H1H471A219	470P 50V	[M]
C1022	F1H1H102A219	1000P 50V	[M]
C1023	F1H1H102A219	1000P 50V	[M]
C1026	ECA0JAK470XB	47 6.3V	[M]
C1027	F1H1H102A219	1000P 50V	[M]
C1030	ECEA1AKA101B	100 10V	[M]
C1031	ECEA1AKA101B	100 10V	[M]
C1032	F1C1C183A023	0.018 16V	[M]
C1033	F1C1C183A023	0.018 16V	[M]
C1034	ECA1HAK3R3XB	3.3 50V	[M]
C1035	ECA1HAK3R3XB	3.3 50V	[M]
C1036	F1H1C333A071	0.033 16V	[M]

[illegible]	[illegible]	[illegible]	[illegible]

Ref. No.	Part No.	Part Name & Description	Remarks
C1037	ECA1HAK3R3XB	3.3 50V	[M]
C1038	F1H1H221A748	220P 50V	[M]
C1039	F1H1H221A748	220P 50V	[M]
C1040	ECA1CAK100XB	10 16V	[M]
C1041	ECA1CAK100XB	10 16V	[M]
C1042	ECA1CAK220XB	22 16V	[M]
C1043	ECA1HAK4R7XB	4.7 50V	[M]
C1044	ECA1AAK330XB	33 10V	[M]
C1045	ECA1AAK220XB	22 10V	[M]
C1046	ECA1CAM221XB	220 16V	[M]
C1049	F1H1H332A013	3300P 50V	[M]
C1050	F1H1H332A013	3300P 50V	[M]
C1056	ECA1CAK100XB	10 16V	[M]
C1057	F1H1H102A219	1000P 50V	[M]
C1058	F1H1H102A219	1000P 50V	[M]
C1059	F1H1H103A219	0.01 50V	[M]
C2101	ECJ1VB1A105K	1 10V	[M]
C2112	ECJ1VB1C105K	1 16V	[M]
C2113	ECJ1VB1H682K	6800P 50V	[M]
C2114	ERJ3GEY0R00V	0 1/16W	[M]
C2121	F1H1H332A013	3300P 50V	[M]
C2122	ECJ1VB1C105K	1 16V	[M]
C2124	ERJ3GEY0R00V	0 1/16W	[M]
C2131	ERJ3GEY0R00V	0 1/16W	[M]
C2132	ECJ1VB1C105K	1 16V	[M]
C2134	ERJ3GEY0R00V	0 1/16W	[M]
C2152	ECJ1VB1C105K	1 16V	[M]
C2154	ERJ3GEY0R00V	0 1/16W	[M]
C2161	F1H1H103A219	0.01 50V	[M]
C2171	F1H1C104A041	0.1 16V	[M]
C2172	ECJ1VB1C823K	0.082 16V	[M]
C2173	F1H1H103A219	0.01 50V	[M]
C2174	F1H1H103A219	0.01 50V	[M]
C2175	F1H1H392A013	3900P 50V	[M]
C2181	ECJ1VB1A105K	1 10V	[M]
C2182	F1H1A105A025	1 10V	[M]
C2183	ECJ1VB1C224K	0.22 16V	[M]
C2191	ECA1HAK4R7XB	4.7 50V	[M]
C2192	F1H1C104A041	0.1 16V	[M]
C2193	ECJ1VB1A105K	1 10V	[M]
C2194	ECJ1VB1A124K	0.12 10V	[M]
C2195	ECJ1VB1A474K	0.47 10V	[M]
C2201	ECJ1VB1A105K	1 10V	[M]
C2212	ECJ1VB1C105K	1 16V	[M]
C2213	ECJ1VB1H682K	6800P 50V	[M]
C2214	ERJ3GEY0R00V	0 1/16W	[M]
C2221	F1H1H332A013	3300P 50V	[M]
C2222	ECJ1VB1C105K	1 16V	[M]
C2224	ERJ3GEY0R00V	0 1/16W	[M]
C2231	ERJ3GEY0R00V	0 1/16W	[M]
C2232	ECJ1VB1C105K	1 16V	[M]
C2234	ERJ3GEY0R00V	0 1/16W	[M]
C2245	ECA1CAK100XB	10 16V	[M]
C2252	ECJ1VB1C105K	1 16V	[M]
C2254	ERJ3GEY0R00V	0 1/16W	[M]
C2261	F1H1H103A219	0.01 50V	[M]
C2271	F1H1A154A001	0.15 10V	[M]

[illegible]	[illegible]	[illegible]	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C2272	ECJ1VB1A124K	0.12 10V	[M]
C2273	F1H1H103A219	0.01 50V	[M]
C2274	F1H1H103A219	0.01 50V	[M]
C2275	F1H1H392A013	3900P 50V	[M]
C2281	ECJ1VB1A105K	1 10V	[M]
C2282	F1H1A105A025	1 10V	[M]
C2283	ECJ1VB1H473K	0.047 50V	[M]
C2301	ECJ1VB1A224K	0.22 10V	[M]
C2302	ECJ1VB1A224K	0.22 10V	[M]
C2311	ECJ1VB1A105K	1 10V	[M]
C2312	ECJ1VB1A105K	1 10V	[M]
C2313	F1H1H470A230	47P 50V	[M]
C2314	ECJ1VC1H100D	10P 50V	[M]
C2315	ECA1CAK220XB	22 16V	[M]
C2321	ECJ1VB1A105K	1 10V	[M]
C2325	ECA1HAK010XB	1 50V	[M]
C2329	ECJ1VB1H472K	4700P 50V	[M]
C2330	ECJ1VB1A224K	0.22 10V	[M]
C2341	F1H1H102A219	1000P 50V	[M]
C2342	ECJ1VB1A105K	1 10V	[M]
C2343	ECJ1VB1A474K	0.47 10V	[M]
C2344	ECJ1VB1A474K	0.47 10V	[M]
C2401	ECJ1VB1A224K	0.22 10V	[M]
C2402	ECJ1VB1A224K	0.22 10V	[M]
C2411	ECJ1VB1A105K	1 10V	[M]
C2412	ECJ1VB1A105K	1 10V	[M]
C2413	F1H1H470A230	47P 50V	[M]
C2414	ECJ1VC1H100D	10P 50V	[M]
C2415	ECA1CAK220XB	22 16V	[M]
C2431	ECJ1VB1C105K	1 16V	[M]
C2433	ECJ1VB1A105K	1 10V	[M]
C2436	ECJ1VB1A224K	0.22 10V	[M]
C2437	ECJ1VB1H472K	4700P 50V	[M]
C2441	F1H1H102A219	1000P 50V	[M]
C2442	ECJ1VB1A105K	1 10V	[M]
C2443	ECJ1VB1A474K	0.47 10V	[M]
C2444	ECJ1VB1A474K	0.47 10V	[M]
C2509	ECA1CAK330XB	33 16V	[M]
C2511	ECEA1HKN2R2B	2.2 50V	[M]
C2581	ECA1CAK101XB	100 16V	[M]
C2582	ECA1CAK101XB	100 16V	[M]
C2583	ECA1CAK101XB	100 16V	[M]
C2584	F1H1H221A748	220P 50V	[M]
C2585	F1H1H221A748	220P 50V	[M]
C2588	F1H1C104A041	0.1 16V	[M]
C2601	F1H1H103A219	0.01 50V	[M]
C2602	ECA1CAK100XB	10 16V	[M]
C2603	F1H1H103A219	0.01 50V	[M]
C2604	F1H1H102A219	1000P 50V	[M]
C2606	F1H1H102A219	1000P 50V	[M]
C2607	ECJ1VB1E473K	0.047 25V	[M]
C2608	ECJ1VC1H080D	8P 50V	[M]
C2609	F1H1H102A219	1000P 50V	[M]
C2610	F1H1H103A219	0.01 50V	[M]
C2611	ECA1HAK4R7XB	4.7 50V	[M]
C2612	F1H1H103A219	0.01 50V	[M]
C2613	F1H1H102A219	1000P 50V	[M]

[illegible]	[illegible]	[illegible]	[illegible]

Ref. No.	Part No.	Part Name & Description	Remarks
C2614	ECA1HAK3R3XB	3.3 50V	[M]
C2615	ECA1HAK4R7XB	4.7 50V	[M]
C2616	F1H1C333A071	0.033 16V	[M]
C2617	F1H1H103A219	0.01 50V	[M]
C2618	F1H1H103A219	0.01 50V	[M]
C2620	ECA1CAK100XB	10 16V	[M]
C2621	ECA1HAKR47XB	0.47 50V	[M]
C2622	ECA1HAK010XB	1 50V	[M]
C2623	ECA1HAK010XB	1 50V	[M]
C2624	ECJ1VC1H101K	100P 50V	[M]
C2625	ECA1CAK220XB	22 16V	[M]
C2626	ECJ1VF1C105Z	1 16V	[M]
C2627	ECA1CAK220XB	22 16V	[M]
C2629	ECA0JAK101XB	100 6.3V	[M]
C2630	ECA0JAK101XB	100 6.3V	[M]
C2631	ECJ1VC1H151J	150P 50V	[M]
C2632	F1H1H102A219	1000P 50V	[M]
C2633	ECJ1VC1H120J	12P 50V	[M]
C2634	ECJ1VC1H120J	12P 50V	[M]
C2636	F1H1H102A219	1000P 50V	[M]
C2637	F1H1H332A013	3300P 50V	[M]
C2638	F1H1H103A219	0.01 50V	[M]
C2639	ECA1HAK4R7XB	4.7 50V	[M]
C2641	ECA1HAK010XB	1 50V	[M]
C2642	ECA1HAK010XB	1 50V	[M]
C2643	ECJ1VB1H682K	6800P 50V	[M]
C2644	ECJ1VB1H682K	6800P 50V	[M]
C2647	F1H1H102A219	1000P 50V	[M]
C2648	F1H1H103A219	0.01 50V	[M]
C2649	F1H1C104A008	0.1 16V	[M]
C2671	ECJ1VC1H101K	100P 50V	[M]
C2673	ECJ1VC1H101K	100P 50V	[M]
C2674	F1H1H103A219	0.01 50V	[M]
C2678	F1H1H103A219	0.01 50V	[M]
C2701	F1H1H103A219	0.01 50V	[M]
C2702	ECA1CAK101XB	100 16V	[M]
C2703	F1H1H471A219	470P 50V	[M]
C2704	F1H1H471A219	470P 50V	[M]
C2705	ECA1HAK010XB	1 50V	[M]
C2706	ECA1HAK010XB	1 50V	[M]
C2711	ECA1CAK101XB	100 16V	[M]
C2712	F1H1H103A219	0.01 50V	[M]
C2753	F1H1C104A041	0.1 16V	[M]
C2802	ECA1HAK3R3XB	3.3 50V	[M]
C2803	ECJ1VB1A105K	1 10V	[M]
C2821	ECJ1VC1H101K	100P 50V	[M]
C2853	F1H1C104A041	0.1 16V	[M]
C2854	ECA0JAK221XB	220 6.3V	[M]
C2871	F1H1H331A013	330P 50V	[M]
C2872	F1H1C223A001	0.022 16V	[M]
C2874	F1H1H331A013	330P 50V	[M]
C2882	ECJ1VC1H180J	18P 50V	[M]
C2883	ECJ1VC1H180J	18P 50V	[M]
C2901	F1H1C104A041	0.1 16V	[M]
C2903	F1H1H103A219	0.01 50V	[M]
C2904	ECA1CAK101XB	100 16V	[M]
C2906	F1H1H102A219	1000P 50V	[M]

[illegible]	[illegible]	[illegible]	[illegible]

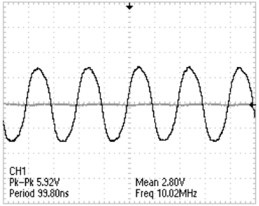
Ref. No.	Part No.	Part Name & Description	Remarks
C2910	ECJ1VB1H681K	680P 50V	[M]
C2940	F1H1C104A041	0.1 16V	[M]
C2941	ECA1CAK330XB	33 16V	[M]
C2943	ECA1HAK2R2XB	2.2 50V	[M]
C2944	ECJ1VC1H101K	100P 50V	[M]
C2945	ECA1CAK470XB	47 16V	[M]
C2947	ECA0JAK101XB	100 6.3V	[M]
C2948	ECA1AAK221XB	220 10V	[M]
C2957	ECJ1VC1H101K	100P 50V	[M]
C2959	ECJ1VC1H101K	100P 50V	[M]
C2976	ECA1CAK100XB	10 16V	[M]
C5101	F2A1V102A154	1000P 35V	[M]
C5102	ECA2AM100B	10 100V	[M]
C5103	ECA2AM100B	10 100V	[M]
C5104	F2A1V102A154	1000P 35V	[M]
C5105	ECA1AAK221XB	220 10V	[M]
C5106	ECJ1VB1H104K	0.1 50V	[M]
C5107	ECJ1VB1H104K	0.1 50V	[M]
C5109	ECA1EAM101XB	100 25V	[M]
C5110	ECA1EAM101XB	100 25V	[M]
C5111	ECA0JAK101XB	100 6.3V	[M]
C5112	ECA1EAK100XB	10 25V	[M]
C5113	ECA1HM330B	33 50V	[M]
C5114	ECJ1VB1H104K	0.1 50V	[M]
C5115	ECJ1VB1H104K	0.1 50V	[M]
C5121	ECA1HAM470XB	47 50V	[M]
C5123	F2A1V102A154	1000P 35V	[M]
C5124	F2A1V102A154	1000P 35V	[M]
C5151	F1H1H101A230	100P 50V	[M]
C5152	ECJ1VB1H104K	0.1 50V	[M]
C5153	F1H1H101A230	100P 50V	[M]
C5155	F1H1H102A219	1000P 50V	[M]
C5157	F1H1H103A219	0.01 50V	[M]
C5158	F1H1H103A219	0.01 50V	[M]
C5159	F1H1H103A219	0.01 50V	[M]
C5171	ECA1HM102E	1000 50V	[M]
C5172	ECA1HM102E	1000 50V	[M]
C5186	ECJ1VB1H104K	0.1 50V	[M]
C5187	ECJ1VB1H104K	0.1 50V	[M]
C5201	F1H1H471A219	470P 50V	[M]
C5202	ECJ1VC1H101K	100P 50V	[M]
C5203	ECJ1VC1H101K	100P 50V	[M]
C5204	ECJ1VC1H101K	100P 50V	[M]
C5205	ECJ1VB1H104K	0.1 50V	[M]
C5208	F2A0J681A550	680P 6.3V	[M]
C5210	F1H1H221A748	220P 50V	[M]
C5301	ECJ1VB1A474K	0.47 10V	[M]
C5302	F1H1H331A013	330P 50V	[M]
C5303	ECJ1VB1A474K	0.47 10V	[M]
C5305	F1H1H331A013	330P 50V	[M]
C5308	ECJ1VB1H104K	0.1 50V	[M]
C5309	ECJ1VB1H104K	0.1 50V	[M]
C5310	F1K2A1040007	0.1 100V	[M]
C5311	F1H1H221A748	220P 50V	[M]
C5312	ECJ1VB1H104K	0.1 50V	[M]
C5313	ECJ1VB1H153K	0.015 50V	[M]
C5314	F1K2A1040007	0.1 100V	[M]

[illegible]	[illegible]	[illegible]	[M]

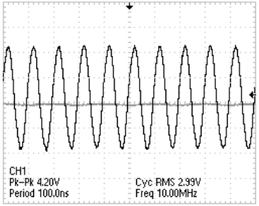
Ref. No.	Part No.	Part Name & Description	Remarks
C5315	ECJ1VB1H104K	0.1 50V	[M]
C5316	ECJ1VB1H104K	0.1 50V	[M]
C5317	ECJ1VB1H104K	0.1 50V	[M]
C5318	F1K2A1040007	0.1 100V	[M]
C5319	ECJ1VB1H153K	0.015 50V	[M]
C5320	ECJ1VB1H104K	0.1 50V	[M]
C5321	F1K2A1040007	0.1 100V	[M]
C5322	ECJ1VB1H104K	0.1 50V	[M]
C5323	ECJ1VB1H104K	0.1 50V	[M]
C5324	ECQV1H684JL3	0.68 50V	[M]
C5325	ECJ1VB1H104K	0.1 50V	[M]
C5326	ERJ3GEY0R00V	0 1/16W	[M]
C5327	ECQV1H684JL3	0.68 50V	[M]
C5328	ECJ1VB1H104K	0.1 50V	[M]
C5329	ERJ3GEY0R00V	0 1/16W	[M]
C5330	F1H2A221A009	220P 100V	[M]
C5331	F1H2A221A009	220P 100V	[M]
C5332	F1H2A221A009	220P 100V	[M]
C5333	F1H2A221A009	220P 100V	[M]
C5335	ECJ1VB1H153K	0.015 50V	[M]
C5336	F1H1H102A219	1000P 50V	[M]
C5337	F1H1H102A219	1000P 50V	[M]
C5339	ECJ1VB1A474K	0.47 10V	[M]
C5340	ECJ1VB1A474K	0.47 10V	[M]
C5343	ECJ1VB1H153K	0.015 50V	[M]
C5435	ECJ1VB1H153K	0.015 50V	[M]
C5701	ECA0JAK101XB	100 6.3V	[M]
C5920	ECA1HM102E	1000 50V	[M]
C5940	ECA1HM102E	1000 50V	[M]
C5950	ECA1EAM222XE	2200 25V	[M]
C5951	F1B1H103A007	0.01 50V	[M]
C5952	ECA1AAK470XB	47 10V	[M]
C5953	F1B1H103A007	0.01 50V	[M]
C5954	F1B1H103A007	0.01 50V	[M]
C5955	ECA1HM220B	22 50V	[M]
C5956	ECA1HAM470XB	47 50V	[M]
C5957	ECA1HAK100XB	10 50V	[M]
C5958	F1B1H103A007	0.01 50V	[M]
C5959	F1B1H103A007	0.01 50V	[M]
C5960	ECQE2104KF3	0.1 250V	[M]
C5961	ECA1AM471B	470 10V	[M]
C5962	ECA1AM471B	470 10V	[M]
C5963	ECA1HAK4R7XB	4.7 50V	[M]
C6481	ECA1HM220B	22 50V	[M]
C6491	ECJ1VC1H101K	100P 50V	[M]
C6492	ECJ1VC1H101K	100P 50V	[M]
C6551	F1H1H103A219	0.01 50V	[M]
C6552	F1H1H103A219	0.01 50V	[M]
C6553	F1H1H103A219	0.01 50V	[M]
C6601	ECJ1VC1H101K	100P 50V	[M]
C6603	ECJ1VC1H101K	100P 50V	[M]
C6604	ECJ1VC1H101K	100P 50V	[M]
C6623	ECA1HM220B	22 50V	[M]
C6631	ECA1HM220B	22 50V	[M]
C6632	ECA1HM220B	22 50V	[M]
C6635	ECA1HAK2R2XB	2.2 50V	[M]
C6636	ECJ1VC1H101K	100P 50V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C6751	**F1H1H103A219**	**0.01 50V**	**[M]**
C6752	**F1H1H103A219**	**0.01 50V**	**[M]**
C6753	**F1H1H103A219**	**0.01 50V**	**[M]**
C7102	**ECJ1VB1A474K**	**0.47 10V**	**[M]**
C7107	**ECJ1VB1H223K**	**0.022 50V**	**[M]**
C7142	**ECJ1VB1H332K**	**3300P 50V**	**[M]**
C7154	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7155	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7161	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7164	**ECJ2FF1A106Z**	**10 10V**	**[M]**
C7165	**ECJ2FF1A106Z**	**10 10V**	**[M]**
C7166	**ECJ1VB1H103K**	**0.01 50V**	**[M]**
C7203	**F2A0J221A200**	**220P 6.3V**	**[M]**
C7204	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7216	**ECJ1VB1H681K**	**680P 50V**	**[M]**
C7217	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7218	**ECJ1VB1C823K**	**0.082 16V**	**[M]**
C7223	**ECEA1HKA4R7I**	**4.7 50V**	**[M]**
C7225	**ECJ1VB1H102K**	**1000P 50V**	**[M]**
C7226	**ECJ1VB1H102K**	**1000P 50V**	**[M]**
C7227	**ECA1HAK010XI**	**1 50V**	**[M]**
C7228	**ECA1HAK010XI**	**1 50V**	**[M]**
C7230	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7231	**F2A0J221A200**	**220P 6.3V**	**[M]**
C7232	**F2A0J221A200**	**220P 6.3V**	**[M]**
C7233	**ECJ1VF1C104Z**	**0.1 16V**	**[M]**
C7234	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7235	**ECEA1CKA100I**	**10 16V**	**[M]**
C7241	**ECJ1VB1H102K**	**1000P 50V**	**[M]**
C7243	**ECJ1VF1C104Z**	**0.1 16V**	**[M]**
C7244	**ECJ1VB1C153K**	**0.015 16V**	**[M]**
C7253	**ECJ1VB1H471K**	**470P 50V**	**[M]**
C7263	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7264	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7315	**ECJ1VB1A474K**	**0.47 10V**	**[M]**
C7334	**ECEA1AKA221I**	**220 10V**	**[M]**
C7335	**ECJ1VF1C104Z**	**0.1 16V**	**[M]**
C7338	**ECJ1VB1C563K**	**0.056 16V**	**[M]**
C7339	**ECJ1VB1C183K**	**0.018 16V**	**[M]**
C7352	**ECJ1VB1C183K**	**0.018 16V**	**[M]**
C7601	**ECEA0JKA330I**	**33 6.3V**	**[M]**
C7613	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7614	**F2A0J101A198**	**100P 6.3V**	**[M]**
C7626	**ECJ1VB1C104K**	**0.1 16V**	**[M]**
C7670	**ECJ1VB1C104K**	**0.1 16V**	**[M]**

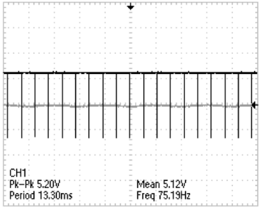
PRT0601 S/P/D/N/A



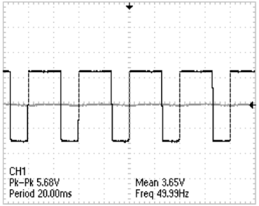
IC2801 PIN 13
CD PLAY
5.92Vp-p (50nsec.div)



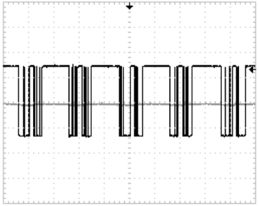
IC2801 PIN 15
CD PLAY
4.2Vp-p (100nsec.div)



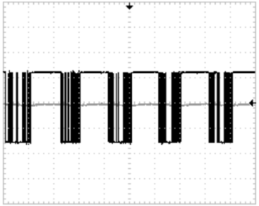
IC2801 PIN 19
CD PLAY
5.2Vp-p (25msec.div)



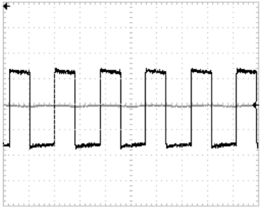
IC2801 PIN 20
CD PLAY
5.68Vp-p (10msec.div)



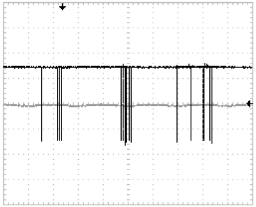
IC2801 PIN 70
CD PLAY
6.06Vp-p (10msec.div)



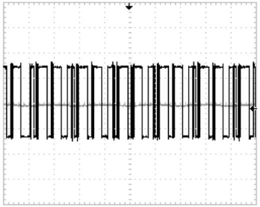
IC2801 PIN 71
CD PLAY
5.84Vp-p (10msec.div)



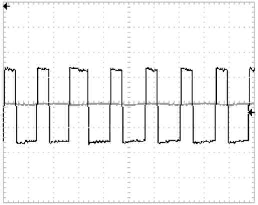
IC2801 PIN 72
CD PLAY
6.32Vp-p (5usec.div)



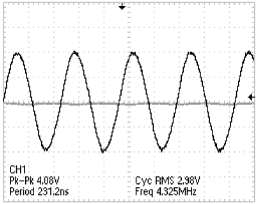
IC2801 PIN 76
CD PLAY
6.48Vp-p (2.5msec.div)



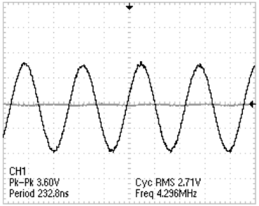
IC2801 PIN 77
CD PLAY
6.24Vp-p (25msec.div)



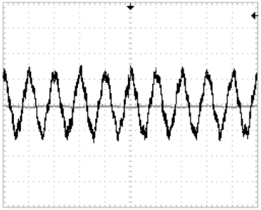
IC2801 PIN 78
CD PLAY
6.03Vp-p (5usec.div)



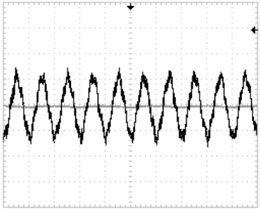
IC2809PIN 8
CD PLAY
4.08Vp-p (100nsec.div)



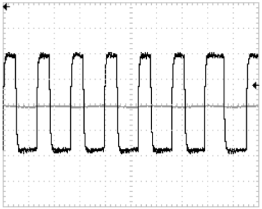
IC2809 PIN 9
CD PLAY
3.6Vp-p (100nsec.div)



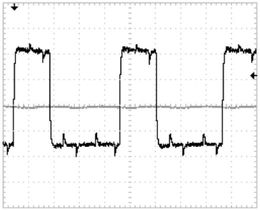
CN2801 PIN 1
CD PLAY
600mVp-p (1msec.div)



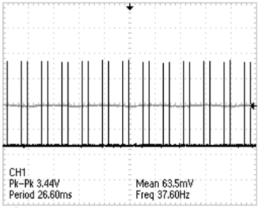
CN2801 PIN 3
CD PLAY
616mVp-p (1msec.div)



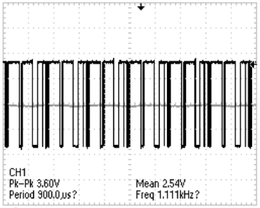
CN2801 PIN 10
CD PLAY
3.96Vp-p (5msec.div)



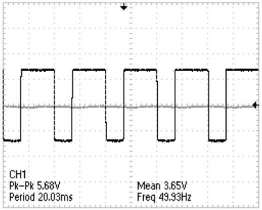
CN2801 PIN 11
CD PLAY
3.66Vp-p (5usec.div)



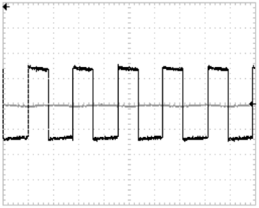
CN2801 PIN 13
CD PLAY
3.44Vp-p (50msec.div)



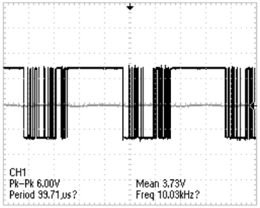
CN2801 PIN 14
CD PLAY
3.6Vp-p (25msec.div)



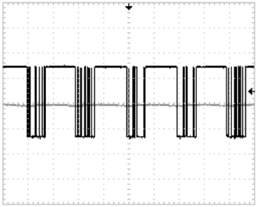
CN2806 PIN 3
CD PLAY
5.68Vp-p (10msec.div)



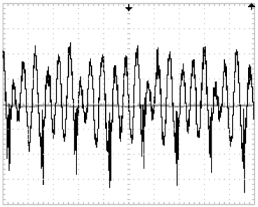
CN2806 PIN 11
CD PLAY
6.08Vp-p (5usec.div)



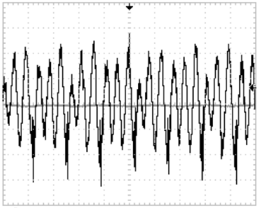
CN2806 PIN 12
CD PLAY
6Vp-p (5msec.div)



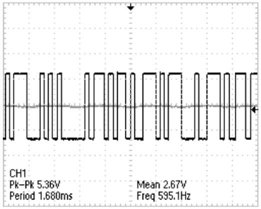
CN2806 PIN 13
CD PLAY
5.68Vp-p (10msec.div)



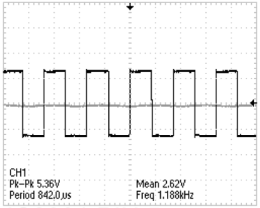
CN2809 PIN 5
CD PLAY
119mVp-p (1usec.div)



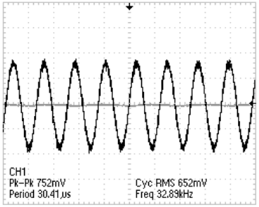
CN2809 PIN 8
CD PLAY
121mVp-p (1usec.div)



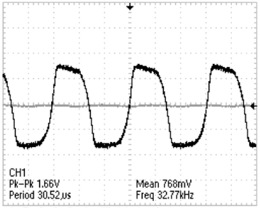
IC2801 PIN 4
CD PLAY
5.36Vp-p (5msec.div)



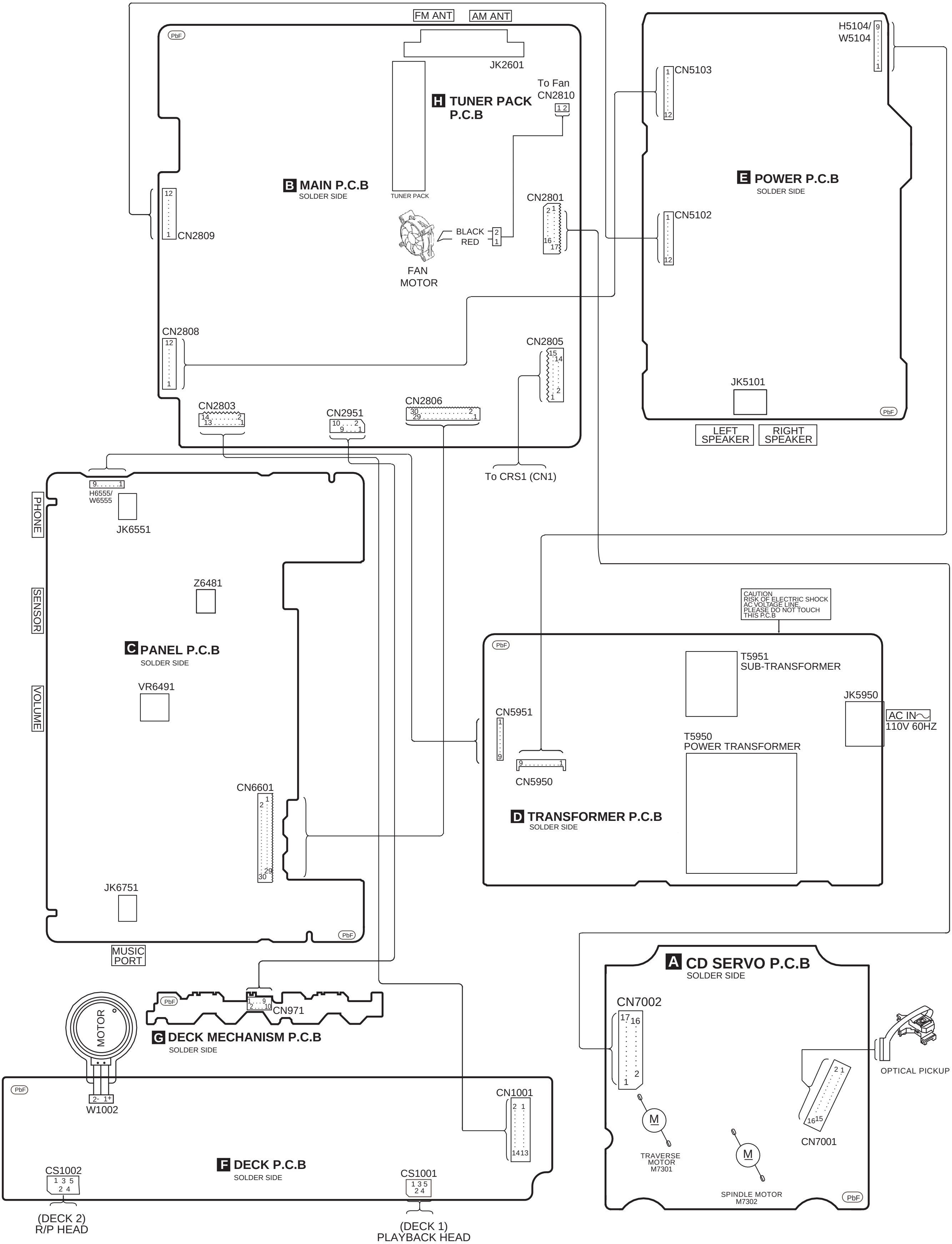
IC2801 PIN 5
CD PLAY
5.36Vp-p (500usec.div)



IC2801 PIN 10
CD PLAY
752mVp-p (25usec.div)



IC2801 PIN 11
CD PLAY
1.66Vp-p (10usec.div)


FM ANT
AM ANT
PbF
JK2601
H TUNER PACK P.C.B
To Fan CN2810
1 2
B MAIN P.C.B
SOLDER SIDE
TUNER PACK
12
1
CN2809
BLACK
RED
2
1
FAN MOTOR
CN2801
2 1
16
17
CN2808
12
1
CN2805
15
14
2
1
CN2803
14 2
13 1
CN2951
10 2
9 1
CN2806
30 2
29 1
To CRS1 (CN1)
H5104/ W5104
9
1
CN5103
1
12
E POWER P.C.B
SOLDER SIDE
CN5102
1
12
JK5101
PbF
LEFT SPEAKER
RIGHT SPEAKER
9 1
H6555/ W6555
JK6551
PHONE
SENSOR
VOLUME
Z6481
C PANEL P.C.B
SOLDER SIDE
VR6491
CN6601
1
2
29
30
JK6751
PbF
MUSIC PORT
CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE.
PLEASE DO NOT TOUCH
THIS P.C.B
PbF
T5951
SUB-TRANSFORMER
JK5950
AC IN~
110V 60HZ
CN5951
1
9
CN5950
9 1
T5950
POWER TRANSFORMER
D TRANSFORMER P.C.B
SOLDER SIDE
PbF
1 9
2 10
CN971
MOTOR
G DECK MECHANISM P.C.B
SOLDER SIDE
A CD SERVO P.C.B
SOLDER SIDE
CN7002
17 16
2
1
OPTICAL PICKUP
2 1
16 15
CN7001
M
TRAVERSE MOTOR M7301
M
SPINDLE MOTOR M7302
PbF
PbF
2- 1+
W1002
CN1001
2 1
14 13
F DECK P.C.B
SOLDER SIDE
CS1002
1 3 5
2 4
CS1001
1 3 5
2 4
(DECK 2) R/P HEAD
(DECK 1) PLAYBACK HEAD

POWER P.C.B.

Ref No.	IC5201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
CD PLAY	0	5	2.4	2.5	2.3	2.4	0	4.2	1.6	2.5	2.6	3.2	1.5	5						
STANDBY	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0						
Ref No.	IC5301																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	2.43	0.05	0.05	28.54	-0.02	-30	-22	28.95	11	-0.1	-30	-18	-30	-0.1	10.8	29	-30	-30	0	28.6
STANDBY	0.1	0	0	0.1	0	0.5	0.1	0.1	0.05	0.2	0.5	0.1	0.5	0.2	0	0.1	0.5	0.8	0	0.1
Ref No.	IC5301																			
MODE	21	22	23																	
CD PLAY	-0.1	-0.1	4.6																	
STANDBY	0	0	0																	

POWER P.C.B.

Ref No.	Q5101			Q5102			Q5103			Q5104			Q5108		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	29	40.7	32.5	-41	30.4	-37.7	0	5.4	-0.3	-0.3	5.4	0	-41	-37.8	-40.5
STANDBY	0	0	10.5	-1	0	0	0	0.5	0.2	0.2	0.5	0	-0.6	0	0.7
Ref No.	Q5109			Q5110			Q5111			Q5112			Q5113		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	-5	-15.3	-3.6	28.4	32.5	29	15.4	28.3	16.1	17.1	12	16.4	17.3	16.5	17.1
STANDBY	0	-0.7	0	0	11	0	0.06	0.06	0.07	0.42	0.08	0.45	0.47	0.45	0.47
Ref No.	Q5114			Q5115			Q5201			Q5202					
MODE	E	C	B	E	C	B	E	C	B	E	C	B			
CD PLAY	11.3	16.4	11.8	5.1	5.7	8	2.6	2.5	2.4	2.6	0	5.1			
STANDBY	0	0.43	0.47	0	0	0	0	0	0	0	0	0			

TRANSFORMER P.C.B.

Ref No.	Q5950			Q5951			Q5952			Q5953					
MODE	E	C	B	E	C	B	E	C	B	E	C	B			
CD PLAY	6.2	6.8	12.2	-24.6	-45	-25	0	3.6	-0.4	0	0.1	0.8			
STANDBY	6.2	6.8	14.8	-20	-20	-20	0	3.8	-0.4	0	6.2	0			
Ref No.															
MODE															
CD PLAY															
STANDBY															
Ref No.															
MODE															
CD PLAY															
STANDBY															
Ref No.															
MODE															
CD PLAY															
STANDBY															

Ref No.	IC2803																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	0	4.6	4.6	4.6	4.6	4.6	4.6	4.6
STANDBY	0	4.6	0	0	4.6	4.6	4.6	0	0	4.6	0	4.6	0	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Ref No.	IC2803																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	4.6	4.6	4.6	4.6	4.6	4.6	4.6	0	0	0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	9.2	5.5	0
STANDBY	4.6	4.6	4.6	4.6	4.6	4.6	4.6	0	0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	9.2	5.5	0
Ref No.	IC2803																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56				
CD PLAY	0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.5	4.5	4.6	4.6	4.6	8	2.2				
STANDBY	0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.5	0	0	4.6	0	0	0				
Ref No.	IC2804																			
MODE	1	2	3	4	5	6	7	8												
CD PLAY	7.5	7.4	7.3	0	15.1	7.5	7.4	7.3												
STANDBY	7.5	7.4	7.3	0	15.1	7.5	7.5	7.3												

MAIN P.C.B.

Ref No.	Q2142			Q2242			Q2311			Q2317			Q2341		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	0	0	0	0	0	0	0	0	-3.5	0	0	-3.5	0	0	-3.5
STANDBY	0	0	0	0	0	0	0	0	0.6	0	0	0.6	0	0	0.6
Ref No.	Q2411			Q2417			Q2441			Q2511			Q2601		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	0	0	-3.5	0	0	-3.5	-	-	-	0	-3.9	0	0	0	0
STANDBY	0	0	0.6	0	0	0.6	0	0	0.6	2.7	2.7	0	0	0	0
Ref No.	Q2606			Q2803			Q2901			Q2902			Q2906		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	15.1	0	15.1	0	5.5	0	5.7	3.4	5	2.6	5.1	3.2	0	5.1	0
STANDBY	14.9	0	14.9	0	5.5	0	6.9	3.4	6.2	2.6	6.2	2.2	0	5.1	0
Ref No.	Q2907			Q2936			Q2937			Q2942			Q2943		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	0	1.7	0.4	12	0	12	0	12	0	12	0	12	0	12	0
STANDBY	0	5.1	0	12.1	2	12.1	0	12.1	0	12.1	0	0	0	12	0
Ref No.	Q2948			Q2949			Q2950			Q2951			Q2952		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	0	0	0.2	0	5.4	0	5.5	5.5	4.8	5.5	5.5	0	0	0.1	5.4
STANDBY	0	0	0.2	0	5.4	0	5.5	5.5	4.8	5.5	5.5	4.8	0	0.1	5.4
Ref No.	Q2957			Q2958			Q2959			Q2960			Q2978		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	0	12	0	12	0	12	0	12	0	12	0	12	5.1	0	5.4
STANDBY	0	12.1	0	2.6	6.2	3.2	0	12.1	0	12.1	0	0	5.1	0	5.4
Ref No.	Q2980														
MODE	E	C	B												
CD PLAY	5.1	-0.4	5.4												
STANDBY	5.1	-0.4	5.4												

CD SERVO P.C.B.(SIDE A)

Ref No.	IC7001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.4
STANDBY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.7	0	0	1.6	0

Ref No.	IC7001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	0	0	1.7	1.7	1.9	0	3.4	1.5	3.4	3.4	0	1.7	1.6	1.7	1.8	1.8	1.7	1.7	1.7	1.7
STANDBY	1.7	3.4	1.7	1.7	1.7	0	3.4	1.5	3.4	3.4	0	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7

Ref No.	IC7001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	0.2	2.5	1.4	1.7	1.7	1.8	3.4	1.2	1.2	1.3	1.7	1.7	0.8	1.5	1.5	1.5	0	3.1	1.5	0
STANDBY	0	3.4	1.4	1.7	1.7	1.8	3.4	1.2	1.2	1.2	0	1.7	0.8	1.1	0	1.5	0	3.1	1.5	0

Ref No.	IC7001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	3.4	3.4	0	0	0	0	3	2.5	3.7	2.3	0	3.7	0	1.7	0	1.5	3.4	0	3.4	1.7
STANDBY	3.4	0.8	0.8	0	3.2	0	3.7	0	3.7	0	0	3.7	0	1.7	0	1.5	3.4	0	3.4	1.7

Ref No.	IC7001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CD PLAY	-	3.4	0	0	0	0	0	0	0	0	0	0	3.4	0	0	0	0	0	0	0
STANDBY	1.6	3.4	0	0	0	0	0	0	0	0	0	0	3.4	0	0	0	0	0	0	0

Ref No.	IC7002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	1.7	0	1.7	0	0	0	0	0	0	7.2	4	3.4	3.4	3.4	3	3.8	3.5	3.2	7.2	0
STANDBY	1.7	0	1.7	3.3	0	0	0	0	0	7.5	3.8	3.8	3.4	3.4	3.4	3.4	3.4	3.4	7.5	0

Ref No.	IC7002																			
MODE	21	22	23	24	25	26	27	28												
CD PLAY	7.3	0	0	0	7.3	1.7	1.7	1.7												
STANDBY	7.5	0	0	0	7.5	1.7	1.7	1.7												

MAIN P.C.B.

Ref No.	IC2601																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	2	0	2	0	0	5	5.2	3.8	6	0	4.9	3.6	0	1.5	1.9	2	2	0	0	0.1
STANDBY	2	6	2	2	0	5	5.2	0	6	0	4.9	0	1.5	1.5	1.9	2	2	0	0	0

Ref No.	IC2601																			
MODE	21	22	23	24																
CD PLAY	2.4	2.4	6	4.6																
STANDBY	2.4	2.4	6	4.6																

Ref No.	IC2602																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	2.6	0	0	0	5.2	0	1.2	4.6	0	14.9	0	0	2.6	0	0	0	0	15	0	2.6
STANDBY	2.6	0	0	0	5.2	4.9	0.8	4.6	0	15	0	0	2.6	0	5.2	0	0	0	0	0

Ref No.	IC2801																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	2.5	0	0	2.5	2.5	0	0	0	0	0	0.0	0.7	5.5	2.7	-	5.5	5.5	5.4	5.5	3.6
STANDBY	0	0	0	2.4	2.5	0	0	0	0	0.6	0.7	0	2.7	0	2.7	5.5	5.5	5.5	0	3.7

Ref No.	IC2801																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	5.1	5.1	0	0	0	0	5.5	0	0	0	0	0	0	0	0	0	5.4	0	5.4	0
STANDBY	5.2	5.1	0	0	0	0	5.5	0	0	0	0	0	5	0	0	0	5.4	0	5.5	5.5

Ref No.	IC2801																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	0	0	0	0	0	5.4	5..4	0	0	0	0	0	5.1	0	0	0	0	5.5	5.5	5.5
STANDBY	0	0	0	0	0	5.4	5..4	0	0	0	0	5	5.1	0	0	0	0	5.5	5.5	5.5

Ref No.	IC2801																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	0	5.5	0	0	0	5.5	0	0	0	3.5	3.8	4.7	0	5.5	1	5.4	4.2	4.9	5.1	0
STANDBY	0	5.5	0	0	0	5.5	0	0	0	5.5	5.5	5.5	5.5	5.5	5.1	5.5	0	5.5	5.1	0

Ref No.	IC2801																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CD PLAY	0	4.6	5.1	0	0	5.1	0	0	0	0.1	5.1	5.5	4.6	4.6	4.7	0	4.7	5.5	5.5	5.4
STANDBY	0	4.6	5.1	0	0	5.1	0	0	0	0.1	5.1	5.5	4.6	4.6	4.7	0	4.7	5.5	5.5	5.4

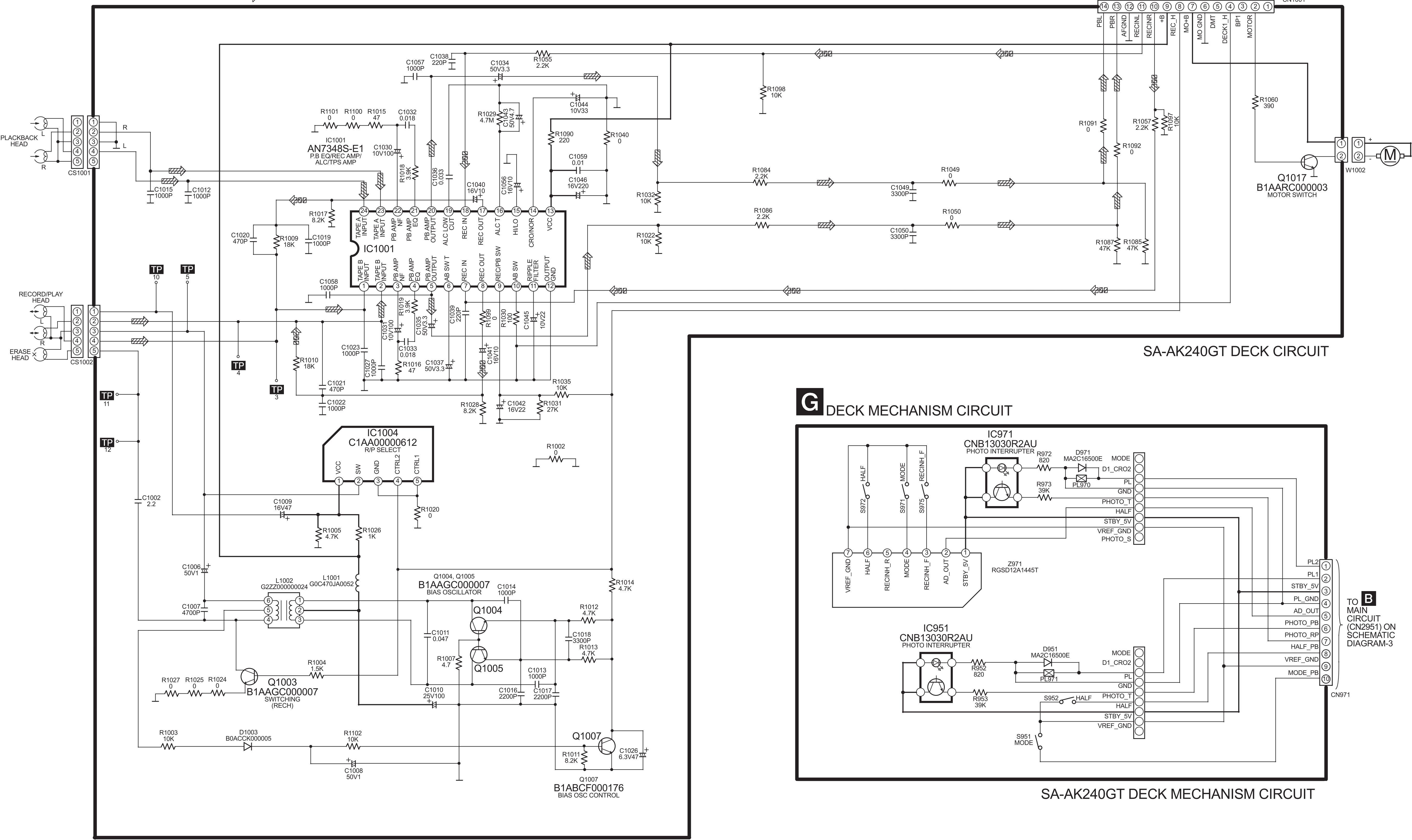
SCHEMATIC DIAGRAM - 7

F DECK CIRCUIT

— : +B SIGNAL

▨ : RECORD SIGNAL LINE

▨ : PLAYBACK SIGNAL

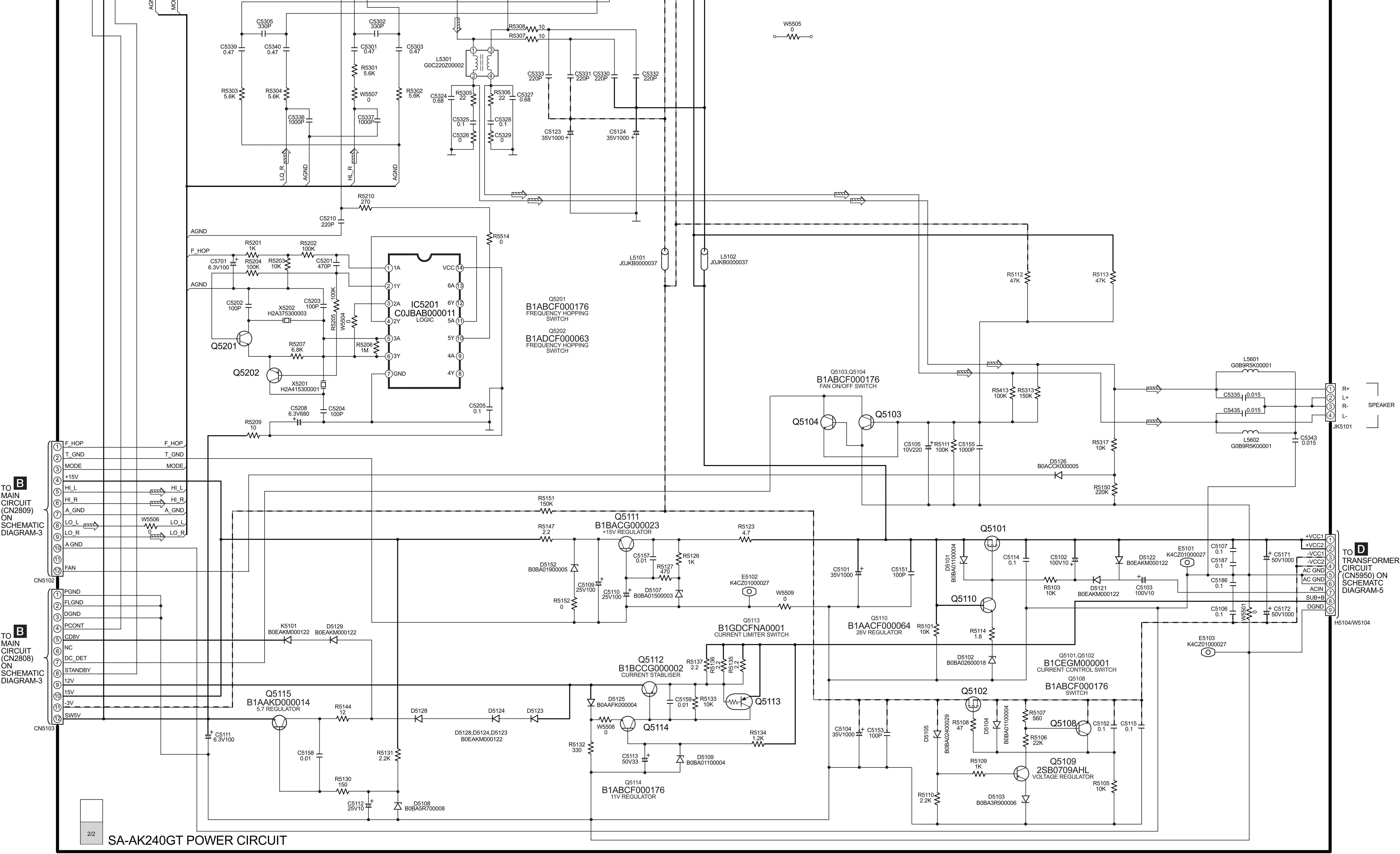


TO B
MAIN CIRCUIT (CN2803) ON SCHEMATIC DIAGRAM-3
CN1001
PBL
PBR
AFGND
RECINL
RECINR
+B
REC_H
MO+B
MO GND
DMT
DECK1_H
BP1
MOTOR
PLACKBACK HEAD
RECORD/PLAY HEAD
ERASE HEAD
CS1001
CS1002
R
L
IC1001
AN7348S-E1
P.B EQ/REC AMP/ ALC/TPS AMP
TAPE A INPUT
PB AMP NF
PB AMP EQ
PB AMP OUTPUT
ALC LOW CUT
REC IN
REC OUT
ALC T
HI/LO
CRO/NOR
VCC
TAPE B INPUT
AB SW T
REC/PB SW
AB SW
RIPPLE FILTER
OUTPUT GND
R1101 0
R1100 0
R1015 47
C1032 0.018
C1057 1000P
C1038 220P
C1034 50V3.3
R1055 2.2K
C1030 10V100
R1018 3.9K
C1036 0.033
C1040 16V10
C1056 16V10
R1029 4.7M
C1043 50V4.7
C1044 10V33
R1090 220
R1040 0
C1059 0.01
C1046 16V220
R1098 10K
R1091 0
R1092 0
R1057 2.2K
R1097 10K
R1060 390
Q1017
B1AARC000003
MOTOR SWITCH
W1002
M
R1084 2.2K
R1049 0
C1049 3300P
R1032 10K
R1086 2.2K
R1050 0
C1050 3300P
R1022 10K
R1087 47K
R1085 47K
R1017 8.2K
C1020 470P
R1009 18K
C1019 1000P
C1058 1000P
TP 10
TP 5
TP 4
TP 3
TP 11
TP 12
R1019 3.9K
C1031 10V100
C1035 50V3.3
C1039 220P
R1099 0
R1030 100
C1045 10V22
C1023 1000P
C1027 1000P
C1033 0.018
R1016 47
C1037 50V3.3
C1041 16V10
R1010 18K
C1021 470P
C1022 1000P
R1035 10K
R1028 8.2K
C1042 16V22
R1031 27K
IC1004
C1AA00000612
R/P SELECT
VCC
SW
GND
CTRL2
CTRL1
R1002 0
C1002 2.2
C1009 16V47
R1005 4.7K
R1026 1K
R1020 0
C1006 50V1
L1002 G2ZZ000000024
L1001 G0C470JA0052
C1007 4700P
Q1004, Q1005
B1AAGC000007
BIAS OSCILLATOR
C1014 1000P
Q1004
Q1005
R1014 4.7K
C1011 0.047
R1007 4.7
R1012 4.7K
C1018 3300P
R1013 4.7K
R1004 1.5K
R1027 0
R1025 0
R1024 0
Q1003
B1AAGC000007
SWITCHING (RECH)
C1010 25V100
C1013 1000P
C1016 2200P
C1017 2200P
R1003 10K
D1003 B0ACCK000005
R1102 10K
C1008 50V1
Q1007
R1011 8.2K
C1026 6.3V47
B1ABCF000176
BIAS OSC CONTROL
IC971
CNB13030R2AU
PHOTO INTERRUPTER
R972 820
D971 MA2C16500E
PL970
R973 39K
MODE
D1_CRO2
PL
GND
PHOTO_T
HALF
STBY_5V
VREF_GND
PHOTO_S
S972
S971
S975
RECINH_F
Z971
RGSD12A1445T
VREF_GND
RECINH_R
AD_OUT
IC951
CNB13030R2AU
PHOTO INTERRUPTER
R952 820
D951 MA2C16500E
PL971
R953 39K
S952
S951 MODE
CN971
PL2
PL1
STBY_5V
PL_GND
AD_OUT
PHOTO_PB
PHOTO_RP
HALF_PB
VREF_GND
MODE_PB
TO B
MAIN CIRCUIT (CN2951) ON SCHEMATIC DIAGRAM-3

SA-AK240GT DECK CIRCUIT

G DECK MECHANISM CIRCUIT

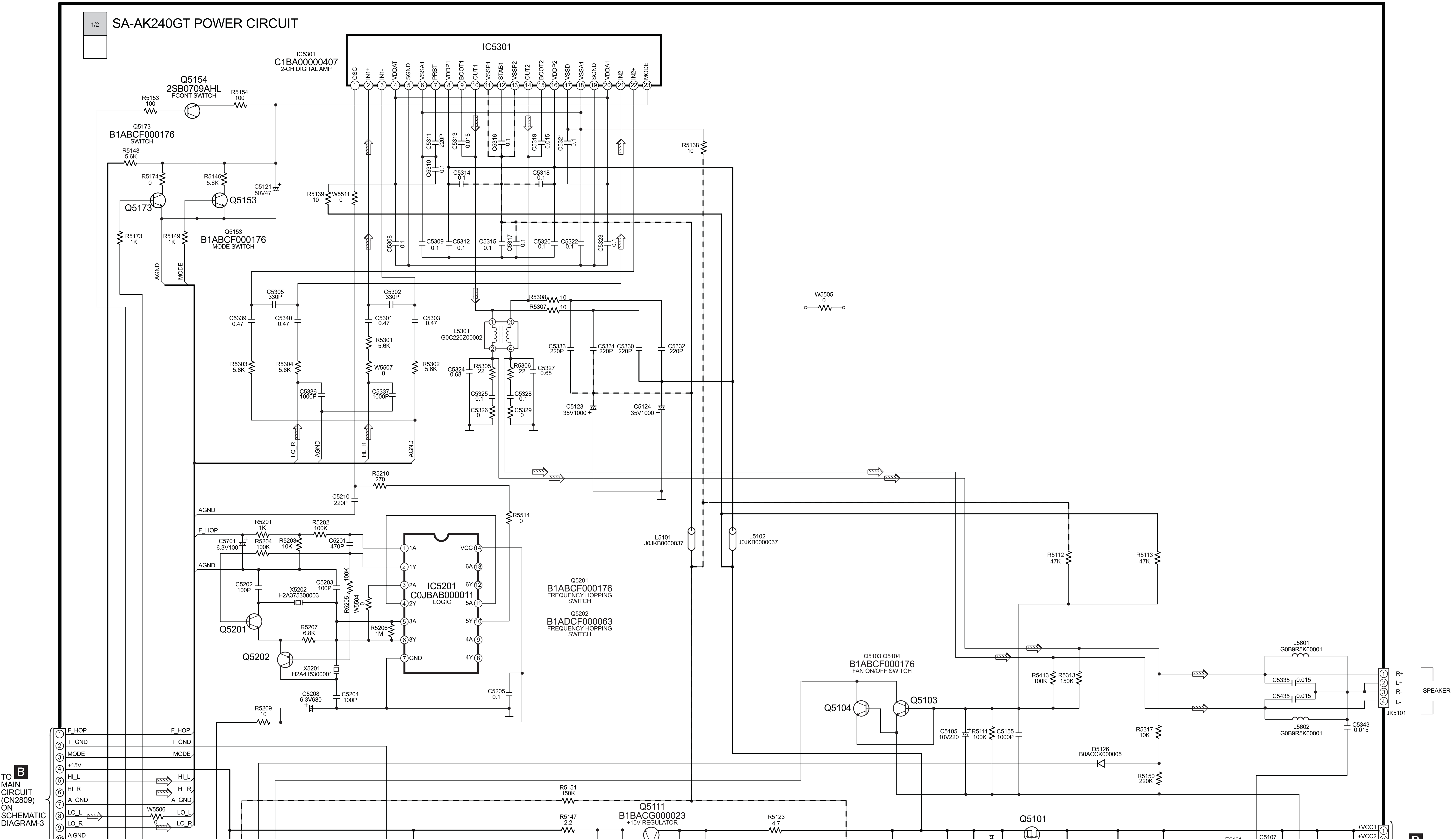
SA-AK240GT DECK MECHANISM CIRCUIT


C5305 330P
C5302 330P
C5339 0.47
C5340 0.47
C5301 0.47
C5303 0.47
R5301 5.6K
W5507 0
R5303 5.6K
R5304 5.6K
R5302 5.6K
C5336 1000P
C5337 1000P
LQ_R
AGND
HL_R
AGND
R5308 10
R5307 10
L5301 G0C220Z00002
C5324 0.68
R5305 22
R5306 22
C5327 0.68
C5325 0.1
C5328 0.1
C5326 0
C5329 0
C5333 220P
C5331 220P
C5330 220P
C5332 220P
C5123 35V1000
C5124 35V1000
W5505 0
R5210 270
C5210 220P
R5514 0
AGND
F_HOP
R5201 1K
R5202 100K
C5701 6.3V100
R5204 100K
R5203 10K
C5201 470P
AGND
C5202 100P
X5202 H2A375300003
C5203 100P
100K
R5205
W5504 0
IC5201 C0JBAB000011 LOGIC
1A
1Y
2A
2Y
3A
3Y
GND
VCC
6A
6Y
5A
5Y
4A
4Y
Q5201
R5207 6.8K
R5206 1M
Q5202
X5201 H2A415300001
C5208 6.3V680
C5204 100P
C5205 0.1
R5209 10
Q5201 B1ABCF000176 FREQUENCY HOPPING SWITCH
Q5202 B1ADCF000063 FREQUENCY HOPPING SWITCH
L5101 J0JKB0000037
L5102 J0JKB0000037
R5112 47K
R5113 47K
Q5103,Q5104 B1ABCF000176 FAN ON/OFF SWITCH
Q5104
Q5103
C5105 10V220
R5111 100K
C5155 1000P
R5413 100K
R5313 150K
L5601 G0B9R5K00001
C5335 0.015
C5435 0.015
L5602 G0B9R5K00001
R5317 10K
C5343 0.015
D5126 B0ACCK000005
R5150 220K
R+
L+
R-
L-
SPEAKER
JK5101
TO B MAIN CIRCUIT (CN2809) ON SCHEMATIC DIAGRAM-3
F_HOP
T_GND
MODE
+15V
HI_L
HI_R
A_GND
LO_L
LO_R
A GND
FAN
CN5102
W5506 0
TO B MAIN CIRCUIT (CN2808) ON SCHEMATIC DIAGRAM-3
PGND
FLGND
DGND
PCONT
CD8V
NC
DC_DET
STANDBY
12V
15V
-3V
SW5V
CN5103
R5151 150K
R5147 2.2
Q5111 B1BACG000023 +15V REGULATOR
R5123 4.7
D5152 B0BA01900005
C5157 0.01
R5126 1K
R5127 470
C5109 25V100
C5110 25V100
D5107 B0BA01500003
R5152 0
E5102 K4CZ01000027
W5509 0
C5101 35V1000
C5151 100P
K5101 B0EAKM000122
D5129 B0EAKM000122
Q5113 B1GDCFNA0001 CURRENT LIMITER SWITCH
Q5112 B1BCCG000002 CURRENT STABLISER
R5137 2.2
R5136 2.2
R5135 2.2
Q5115 B1AAKD000014 5.7 REGULATOR
R5144 12
D5128
D5124
D5123
D5128,D5124,D5123 B0EAKM000122
C5111 6.3V100
C5158 0.01
R5131 2.2K
R5130 150
C5112 25V10
D5108 B0BA5R700008
D5125 B0AAFK000004
C5159 0.01
R5133 10K
Q5113
W5508 0
Q5114
R5134 1.2K
R5132 330
C5113 50V33
D5109 B0BA01100004
Q5114 B1ABCF000176 11V REGULATOR
Q5101
D5101 B0BA01100004
C5114 0.1
C5102 100V10
D5122 B0EAKM000122
E5101 K4CZ01000027
C5107 0.1
C5187 0.1
C5171 50V1000
R5103 10K
D5121 B0EAKM000122
C5103 100V10
C5186 0.1
Q5110
R5101 10K
R5114 1.8
Q5110 B1AACF000064 26V REGULATOR
D5102 B0BA02600018
C5106 0.1
W5501 0
C5172 50V1000
E5103 K4CZ01000027
Q5101,Q5102 B1CEGM000001 CURRENT CONTROL SWITCH
Q5108 B1ABCF000176 SWITCH
Q5102
C5104 35V1000
C5153 100P
D5105 B0BA02400029
R5108 47
D5104 B0BA01100004
R5107 560
Q5108
C5152 0.1
C5115 0.1
R5106 22K
R5109 1K
Q5109 2SB0709AHL VOLTAGE REGULATOR
R5110 2.2K
D5103 B0BA3R900006
R5105 10K
+VCC1
+VCC2
-VCC1
-VCC2
AC GND
AC GND
ACIN
SUB+B
DGND
H5104/W5104
TO D TRANSFORMER CIRCUIT (CN5950) ON SCHEMATC DIAGRAM-5
2/2

SA-AK240GT POWER CIRCUIT

SCHEMATIC DIAGRAM - 6

E POWER CIRCUIT — : +B SIGNAL LINE - - : -B SIGNAL LINE ⇨ : MAIN SIGNAL LINE

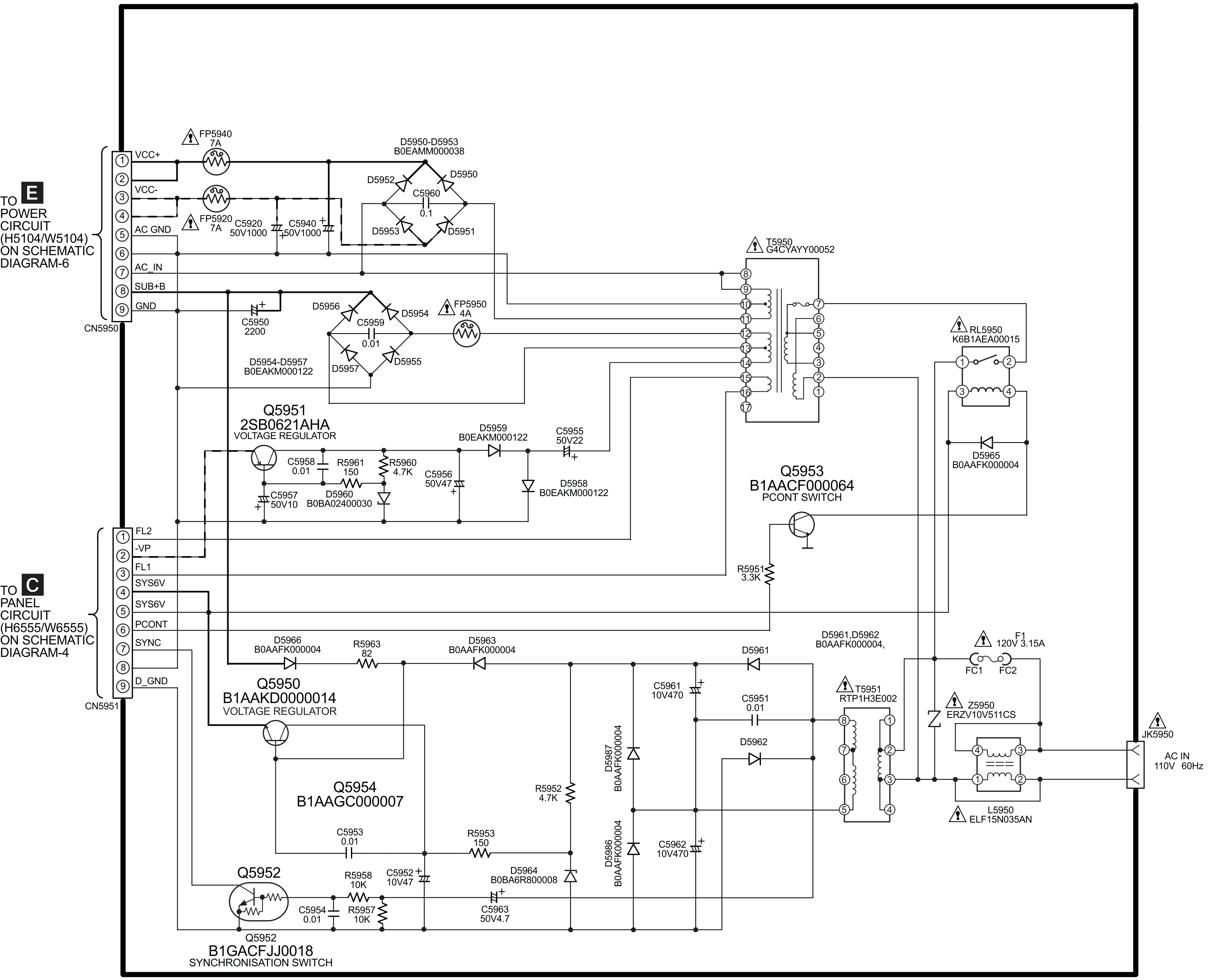


1/2
SA-AK240GT POWER CIRCUIT
IC5301
IC5301
C1BA00000407
2-CH DIGITAL AMP
OSC
IN1+
IN1-
VDDAT
SGND
VSSA1
PRBT
VDDP1
BOOT1
OUT1
VSSP1
STAB1
VSSP2
OUT2
BOOT2
VDDP2
VSSD
VSSA1
SGND
VDDA1
IN2-
IN2+
MODE
Q5154
2SB0709AHL
PCONT SWITCH
R5153
100
R5154
100
Q5173
B1ABCF000176
SWITCH
R5148
5.6K
R5174
0
R5146
5.6K
C5121
50V47
Q5173
Q5153
Q5153
B1ABCF000176
MODE SWITCH
R5173
1K
R5149
1K
AGND
MODE
R5139
10
W5511
0
C5311
220P
C5313
0.015
C5316
0.1
C5319
0.015
C5321
0.1
C5310
0.1
C5314
0.1
C5318
0.1
R5138
10
C5308
0.1
C5309
0.1
C5312
0.1
C5315
0.1
C5317
0.1
C5320
0.1
C5322
0.1
C5323
0.1
C5305
330P
C5302
330P
C5339
0.47
C5340
0.47
C5301
0.47
C5303
0.47
R5301
5.6K
R5303
5.6K
R5304
5.6K
W5507
0
R5302
5.6K
C5336
1000P
C5337
1000P
LO_R
AGND
HI_R
AGND
R5308
10
R5307
10
L5301
G0C220Z00002
C5333
220P
C5331
220P
C5330
220P
C5332
220P
C5324
0.68
R5305
22
R5306
22
C5327
0.68
C5325
0.1
C5328
0.1
C5326
0
C5329
0
C5123
35V1000
C5124
35V1000
W5505
0
R5210
270
C5210
220P
AGND
F_HOP
AGND
R5514
0
R5201
1K
R5202
100K
C5701
6.3V100
R5204
100K
R5203
10K
C5201
470P
C5202
100P
X5202
H2A375300003
C5203
100P
100K
R5205
W5504
0
IC5201
C0JBAB000011
LOGIC
1A
1Y
2A
2Y
3A
3Y
GND
VCC
6A
6Y
5A
5Y
4A
4Y
Q5201
R5207
6.8K
R5206
1M
Q5202
X5201
H2A415300001
C5208
6.3V680
C5204
100P
C5205
0.1
R5209
10
Q5201
B1ABCF000176
FREQUENCY HOPPING
SWITCH
Q5202
B1ADCF000063
FREQUENCY HOPPING
SWITCH
L5101
J0JKB0000037
L5102
J0JKB0000037
R5112
47K
R5113
47K
Q5103,Q5104
B1ABCF000176
FAN ON/OFF SWITCH
Q5104
Q5103
R5413
100K
R5313
150K
C5105
10V220
R5111
100K
C5155
1000P
R5317
10K
D5126
B0ACCK000005
R5150
220K
L5601
G0B9R5K00001
C5335
0.015
C5435
0.015
L5602
G0B9R5K00001
C5343
0.015
R+
L+
R-
L-
JK5101
SPEAKER
F_HOP
T_GND
MODE
+15V
HI_L
HI_R
A_GND
LO_L
LO_R
A GND
F_HOP
T_GND
MODE
HI_L
HI_R
A_GND
W5506
0
LO_L
LO_R
TO B MAIN CIRCUIT (CN2809) ON SCHEMATIC DIAGRAM-3
R5151
150K
R5147
2.2
Q5111
B1BACG000023
+15V REGULATOR
R5123
4.7
Q5101
+VCC1
+VCC2
C5107

SCHEMATIC DIAGRAM - 5

D TRANSFORMER CIRCUIT

—— : +B SIGNAL LINE   – – : -B SIGNAL LINE

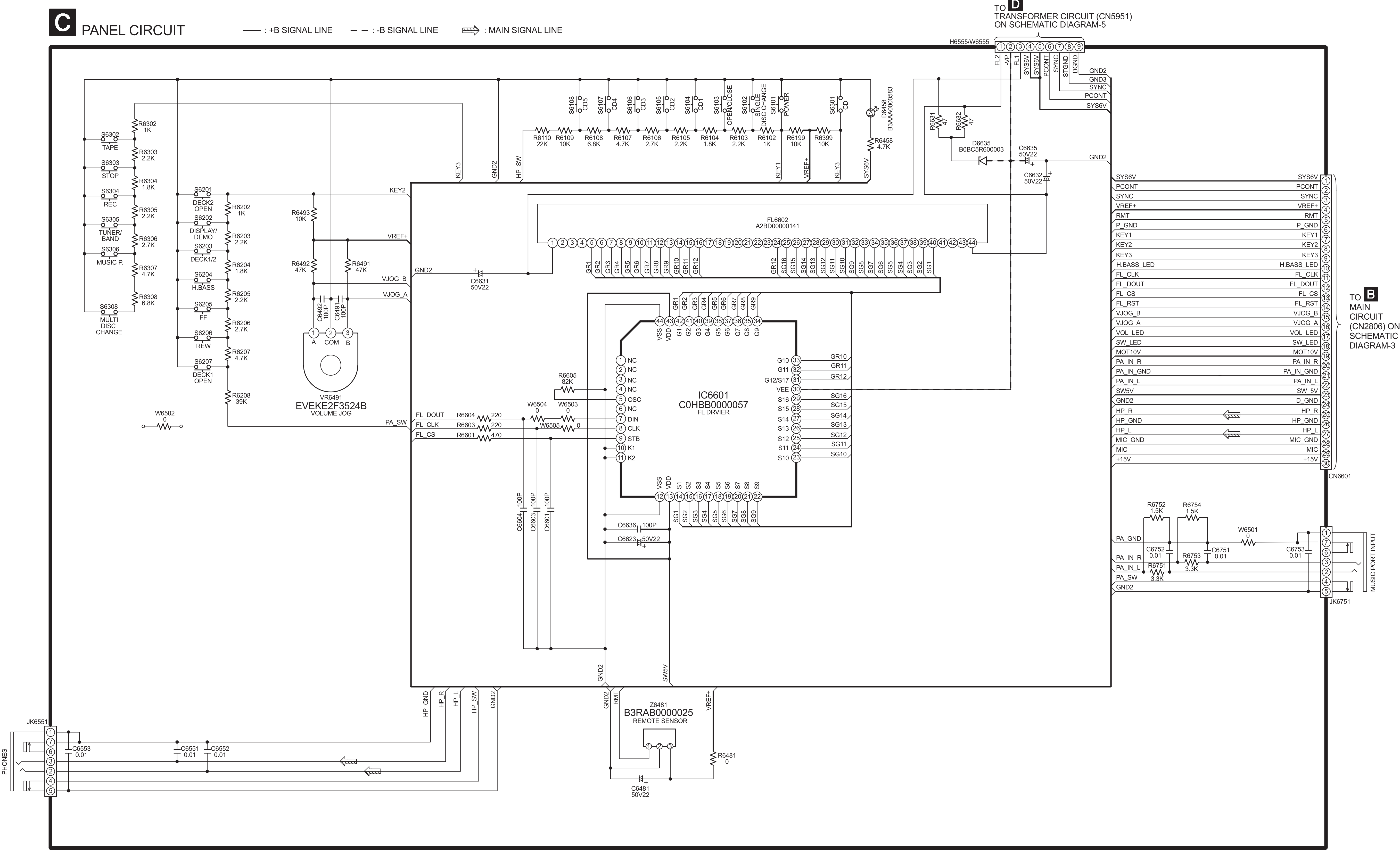


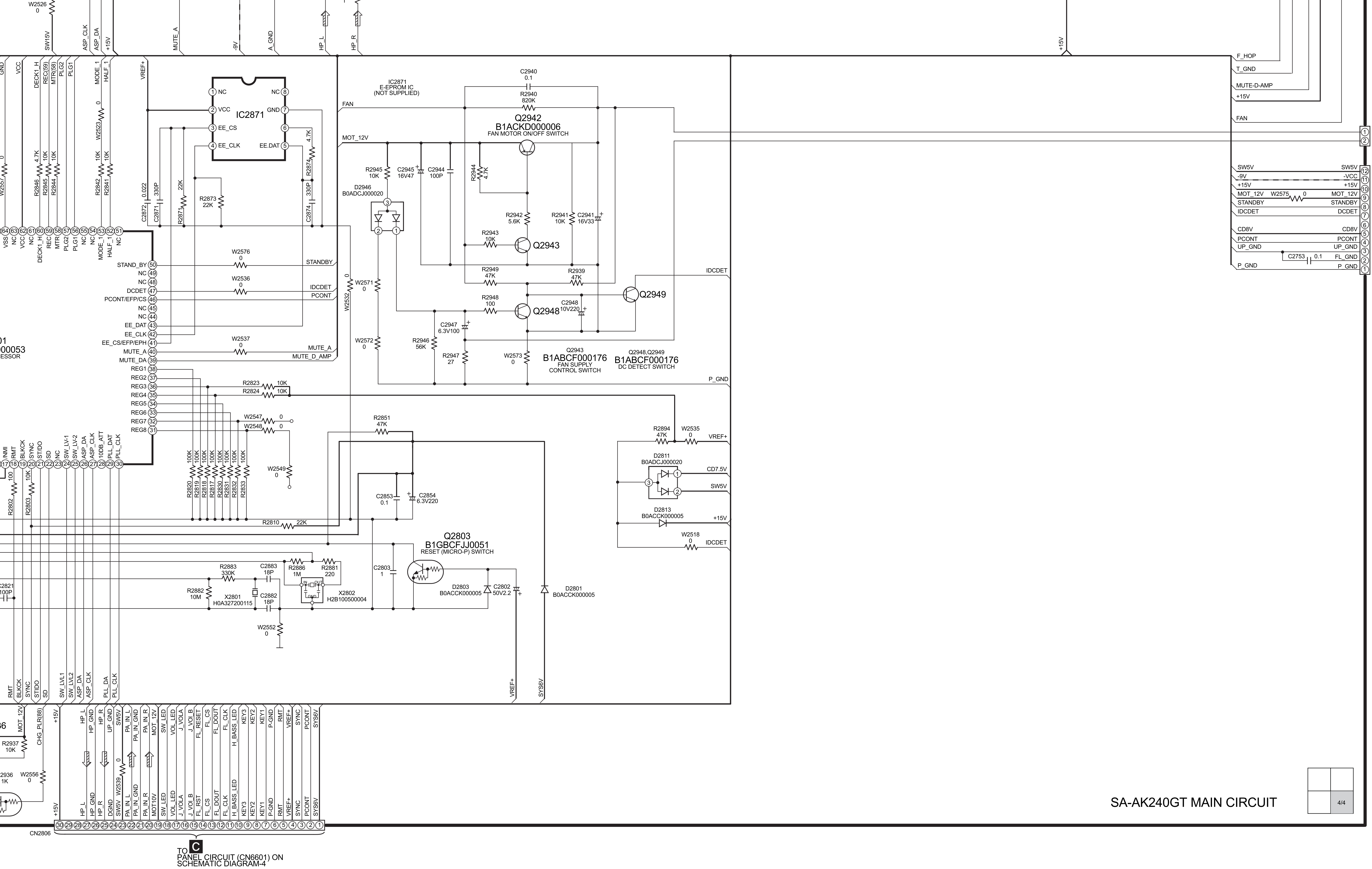
TO E POWER CIRCUIT (H5104/W5104) ON SCHEMATIC DIAGRAM-6
CN5950
VCC+
VCC-
AC GND
AC_IN
SUB+B
GND
FP5940 7A
FP5920 7A
C5920 50V1000
C5940 50V1000
D5950-D5953 B0EAMM000038
D5952
D5950
C5960 0.1
D5953
D5951
C5950 2200
D5956
D5954
C5959 0.01
D5957
D5955
FP5950 4A
D5954-D5957 B0EAKM000122
T5950 G4CYAYY00052
RL5950 K6B1AEA00015
Q5951 2SB0621AHA VOLTAGE REGULATOR
C5958 0.01
R5961 150
R5960 4.7K
C5957 50V10
D5960 B0BA02400030
D5959 B0EAKM000122
C5956 50V47
C5955 50V22
D5958 B0EAKM000122
D5965 B0AAFK000004
Q5953 B1AACF000064 PCONT SWITCH
R5951 3.3K
TO C PANEL CIRCUIT (H6555/W6555) ON SCHEMATIC DIAGRAM-4
CN5951
FL2
-VP
FL1
SYS6V
SYS6V
PCONT
SYNC
D_GND
D5966 B0AAFK000004
R5963 82
D5963 B0AAFK000004
D5961
D5961,D5962 B0AAFK000004,
Q5950 B1AAKD0000014 VOLTAGE REGULATOR
C5961 10V470
C5951 0.01
D5962
T5951 RTP1H3E002
F1 120V 3.15A
FC1 FC2
Z5950 ERZV10V511CS
JK5950
AC IN 110V 60Hz
L5950 ELF15N035AN
Q5954 B1AAGC000007
R5952 4.7K
D5987 B0AAFK000004
D5986 B0AAFK000004
C5962 10V470
C5953 0.01
R5953 150
D5964 B0BA6R800008
Q5952
R5958 10K
C5952 10V47
C5963 50V4.7
C5954 0.01
R5957 10K
Q5952 B1GACFJJ0018 SYNCHRONISATION SWITCH

SA-AK240GT TRANSFORMER CIRCUIT

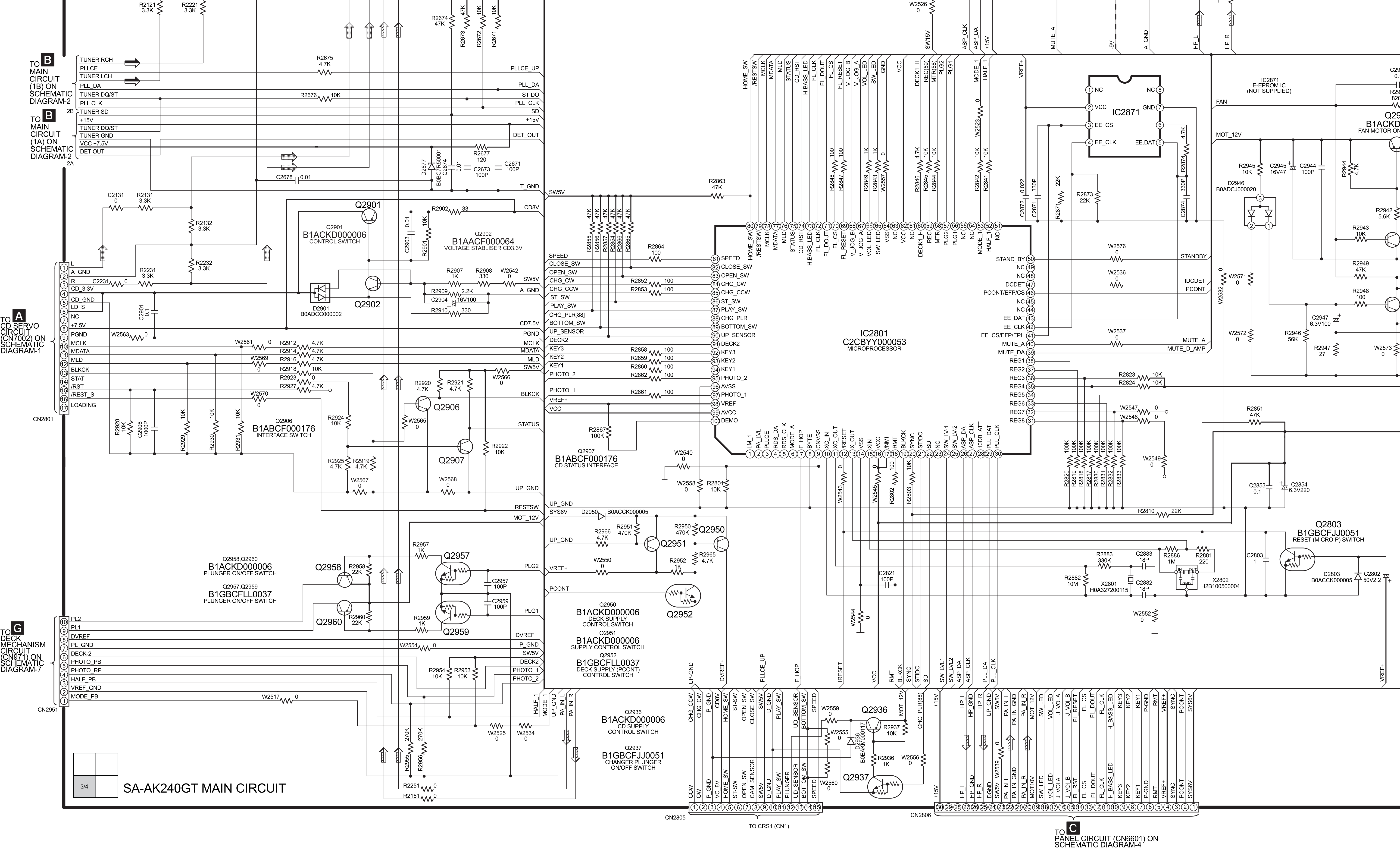
C PANEL CIRCUIT

—— : +B SIGNAL LINE – – : -B SIGNAL LINE ⇨ : MAIN SIGNAL LINE


TO D
TRANSFORMER CIRCUIT (CN5951)
ON SCHEMATIC DIAGRAM-5
H6555/W6555
FL2
-VP
FL1
SYS6V
SYS6V
PCONT
SYNC
STGND
DGND
GND2
GND3
SYNC
PCONT
SYS6V
S6302 TAPE
S6303 STOP
S6304 REC
S6305 TUNER/ BAND
S6306 MUSIC P.
S6308 MULTI DISC CHANGE
R6302 1K
R6303 2.2K
R6304 1.8K
R6305 2.2K
R6306 2.7K
R6307 4.7K
R6308 6.8K
S6201 DECK2 OPEN
S6202 DISPLAY/ DEMO
S6203 DECK1/2
S6204 H.BASS
S6205 FF
S6206 REW
S6207 DECK1 OPEN
R6202 1K
R6203 2.2K
R6204 1.8K
R6205 2.2K
R6206 2.7K
R6207 4.7K
R6208 39K
W6502 0
R6493 10K
R6492 47K
R6491 47K
C6492 100P
C6491 100P
A
COM
B
VR6491
EVEKE2F3524B
VOLUME JOG
S6108 CD5
S6107 CD4
S6106 CD3
S6105 CD2
S6104 CD1
S6103 OPEN/CLOSE
S6102 SINGLE DISC CHANGE
S6101 POWER
S6301 CD
D6458 B3AA0000583
R6110 22K
R6109 10K
R6108 6.8K
R6107 4.7K
R6106 2.7K
R6105 2.2K
R6104 1.8K
R6103 2.2K
R6102 1K
R6199 10K
R6399 10K
R6458 4.7K
KEY3
GND2
HP_SW
KEY1
VREF+
KEY3
SYS6V
KEY2
VREF+
GND2
VJOG_B
VJOG_A
PA_SW
C6631 50V22
R6631 47
R6632 47
D6635 B0BC5R600003
C6635 50V22
C6632 50V22
GND2
FL6602
A2BD00000141
GR1 GR2 GR3 GR4 GR5 GR6 GR7 GR8 GR9 GR10 GR11 GR12
GR12 SG16 SG15 SG14 SG13 SG12 SG11 SG10 SG9 SG8 SG7 SG6 SG5 SG4 SG3 SG2 SG1
IC6601
C0HBB0000057
FL DRVIER
VSS VDD G1 G2 G3 G4 G5 G6 G7 G8 G9
NC NC NC NC OSC NC DIN CLK STB K1 K2
G10 G11 G12/S17 VEE S16 S15 S14 S13 S12 S11 S10
GR10 GR11 GR12 SG16 SG15 SG14 SG13 SG12 SG11 SG10
VSS VDD S1 S2 S3 S4 S5 S6 S7 S8 S9
SG1 SG2 SG3 SG4 SG5 SG6 SG7 SG8 SG9
R6605 82K
W6504 0
W6503 0
W6505 0
FL_DOUT R6604 220
FL_CLK R6603 220
FL_CS R6601 470
C6604 100P
C6603 100P
C6601 100P
C6636 100P
C6623 50V22
GND2
SW5V
SYS6V
PCONT
SYNC
VREF+
RMT
P_GND
KEY1
KEY2
KEY3
H.BASS_LED
FL_CLK
FL_DOUT
FL_CS
FL_RST
VJOG_B
VJOG_A
VOL_LED
SW_LED
MOT10V
PA_IN_R
PA_IN_GND
PA_IN_L
SW5V
GND2
D_GND
HP_R
HP_GND
HP_L
MIC_GND
MIC
+15V
CN6601
TO B
MAIN CIRCUIT (CN2806) ON SCHEMATIC DIAGRAM-3
R6752 1.5K
R6754 1.5K
W6501 0
PA_GND
PA_IN_R
PA_IN_L
PA_SW
GND2
C6752 0.01
C6751 0.01
C6753 0.01
R6751 3.3K
R6753 3.3K
JK6751
MUSIC PORT INPUT
HP_GND
HP_R
HP_L
HP_SW
GND2
GND2
RMT
VREF+
Z6481
B3RAB0000025
REMOTE SENSOR
R6481 0
C6481 50V22
JK6551
PHONES
C6553 0.01
C6551 0.01
C6552 0.01


IC2871
E-EPROM IC
(NOT SUPPLIED)
Q2942
B1ACKD000006
FAN MOTOR ON/OFF SWITCH
Q2943
B1ABCF000176
FAN SUPPLY
CONTROL SWITCH
Q2948,Q2949
B1ABCF000176
DC DETECT SWITCH
Q2803
B1GBCFJJ0051
RESET (MICRO-P) SWITCH
D2946
B0ADCJ000020
D2811
B0ADCJ000020
D2813
B0ACCK000005
D2803
B0ACCK000005
D2801
B0ACCK000005
X2801
H0A327200115
X2802
H2B100500004
C2940 0.1
R2940 820K
C2945 16V47
C2944 100P
R2945 10K
R2944 4.7K
R2942 5.6K
R2941 10K
C2941 16V33
R2943 10K
R2949 47K
R2939 47K
R2948 100
C2948 10V220
C2947 6.3V100
R2946 56K
R2947 27
W2573 0
W2571 0
W2572 0
W2532 0
R2873 22K
R2874 4.7K
C2872 0.022
C2871 330P
R2871 22K
C2874 330P
W2576 0
W2536 0
W2537 0
R2823 10K
R2824 10K
W2547 0
W2548 0
W2549 0
R2851 47K
C2853 0.1
C2854 6.3V220
R2810 22K
R2894 47K
W2535 0
W2518 0
R2883 330K
C2883 18P
R2886 1M
R2881 220
R2882 10M
C2882 18P
W2552 0
C2803 1
C2802 50V2.2
FAN
MOT_12V
STANDBY
IDCDET
PCONT
MUTE_A
MUTE_D_AMP
P_GND
VREF+
CD7.5V
SW5V
+15V
SYS6V
F_HOP
T_GND
MUTE-D-AMP
TO FAN
CN2810
SW5V
-9V
-VCC
MOT_12V
W2575 0
STANDBY
DCDET
CD8V
UP_GND
C2753 0.1
FL_GND
CN2808
TO E POWER CIRCUIT (CN5103) ON SCHEMATIC DIAGRAM-6
CN2806
TO C PANEL CIRCUIT (CN6601) ON SCHEMATIC DIAGRAM-4
4/4

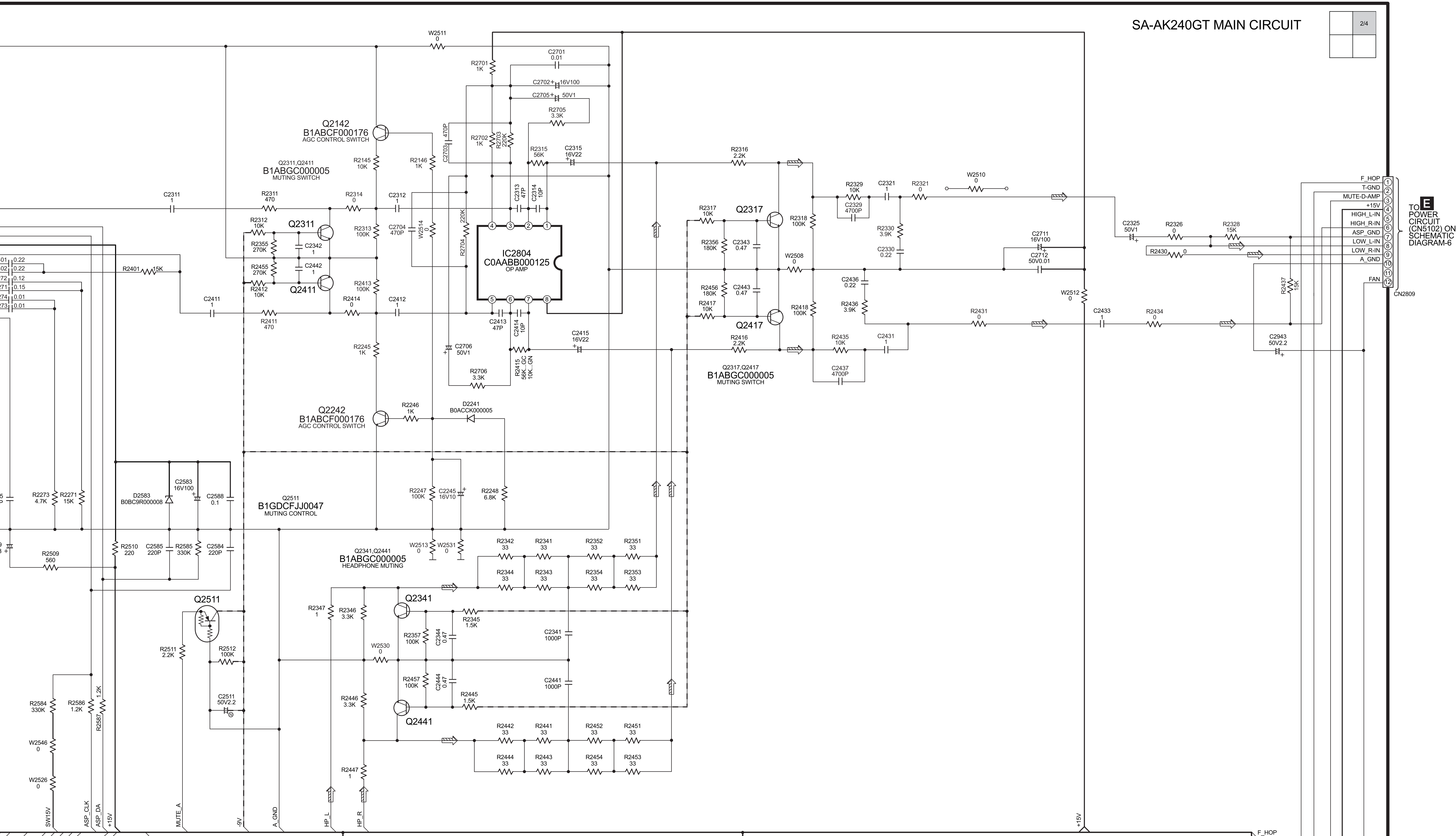
SA-AK240GT MAIN CIRCUIT


TO B MAIN CIRCUIT (1B) ON SCHEMATIC DIAGRAM-2
TO B MAIN CIRCUIT (1A) ON SCHEMATIC DIAGRAM-2
2B
2A
TUNER RCH
PLLCE
TUNER LCH
PLL_DA
TUNER DQ/ST
PLL CLK
TUNER SD
+15V
TUNER DQ/ST
TUNER GND
VCC +7.5V
DET OUT
PLLCE_UP
PLL_DA
STIDO
PLL_CLK
SD
+15V
DET_OUT
T_GND
CD8V
SW5V
A_GND
CD7.5V
PGND
MCLK
MDATA
MLD
SW5V
BLKCK
STATUS
UP_GND
RESTSW
MOT_12V
PLG2
PLG1
DVREF+
P_GND
SW5V
DECK2
PHOTO_1
PHOTO_2
R2121 3.3K
R2221 3.3K
R2675 4.7K
R2676 10K
R2674 47K
R2673 47K
R2672 10K
R2671 10K
R2677 120
C2671 100P
C2673 100P
C2674 0.01
D2677 B0BC7R50001
C2678 0.01
C2131 0
R2131 3.3K
R2132 3.3K
R2232 3.3K
R2231 3.3K
C2231 0
C2901 0.1
Q2901
Q2901 B1ACKD000006 CONTROL SWITCH
Q2902 B1AACF000064 VOLTAGE STABLISER CD3.3V
Q2902
D2901 B0ADCC000002
C2903 0.01
R2901 10K
R2902 33
R2907 1K
R2908 330
W2542 0
R2909 2.2K
C2904 16V100
R2910 330
TO A CD SERVO CIRCUIT (CN7002) ON SCHEMATIC DIAGRAM-1
L
A_GND
R
CD_3.3V
CD_GND
LD_S
NC
+7.5V
PGND
MCLK
MDATA
MLD
BLKCK
STAT
/RST
/REST_S
LOADING
CN2801
W2563 0
W2561 0
R2912 4.7K
R2914 4.7K
R2916 4.7K
W2569 0
R2918 10K
R2923 0
R2927 4.7K
W2570 0
R2928 10K
C2906 1000P
R2929 10K
R2930 10K
R2931 10K
Q2906 B1ABCF000176 INTERFACE SWITCH
R2924 10K
R2920 4.7K
R2921 4.7K
W2566 0
Q2906
W2565 0
Q2907
R2922 10K
R2925 4.7K
R2919 4.7K
W2567 0
W2568 0
Q2958,Q2960 B1ACKD000006 PLUNGER ON/OFF SWITCH
Q2957,Q2959 B1GBCFLL0037 PLUNGER ON/OFF SWITCH
Q2958
Q2960
Q2957
Q2959
R2957 1K
R2958 22K
R2960 22K
R2959 1K
C2957 100P
C2959 100P
TO G DECK MECHANISM CIRCUIT (CN971) ON SCHEMATIC DIAGRAM-7
PL2
PL1
DVREF
PL_GND
DECK-2
PHOTO_PB
PHOTO_RP
HALF_PB
VREF_GND
MODE_PB
CN2951
W2554 0
R2954 10K
R2953 10K
W2517 0
HALF_1
MODE_1
UP_GND
PA_IN_L
PA_IN_R
W2525 0
W2534 0
R2955 270K
R2956 270K
R2251 0
R2151 0
SW5V
SPEED
CLOSE_SW
OPEN_SW
CHG_CW
CHG_CCW
ST_SW
PLAY_SW
CHG_PLR[88]
BOTTOM_SW
UP_SENSOR
DECK2
KEY3
KEY2
KEY1
PHOTO_2
PHOTO_1
VREF+
VCC
UP_GND
SYS6V
UP_GND
VREF+
PCONT
R2855 47K
R2856 47K
R2857 47K
R2854 47K
R2866 47K
R2865 47K
R2864 100
R2852 100
R2853 100
R2858 100
R2859 100
R2860 100
R2862 100
R2861 100
R2867 100K
Q2907 B1ABCF000176 CD STATUS INTERFACE
W2540 0
W2558 0
R2801 10K
D2950 B0ACCK000005
R2951 470K
R2966 4.7K
R2950 470K
Q2950
Q2951
R2965 4.7K
W2550 0
R2952 1K
Q2952
Q2950 B1ACKD000006 DECK SUPPLY CONTROL SWITCH
Q2951 B1ACKD000006 SUPPLY CONTROL SWITCH
Q2952 B1GBCFLL0037 DECK SUPPLY (PCONT) CONTROL SWITCH
Q2936 B1ACKD000006 CD SUPPLY CONTROL SWITCH
Q2937 B1GBCFJJ0051 CHANGER PLUNGER ON/OFF SWITCH
R2863 47K
IC2801 C2CBYY000053 MICROPROCESSOR
HOME_SW
/RESTSW
MCLK
MDATA
MLD
STATUS
CD_RST
H.BASS_LED
FL_CLK
FL_DOUT
FL_CS
FL_RESET
V_JOG_B
V_JOG_A
VOL_LED
SW_LED
VSS
NC
VCC
NC
DECK1_H
REC
MTR
PLG2
PLG1
NC
MODE_1
HALF_1
NC
STAND_BY
NC
NC
DCDET
PCONT/EFP/CS
NC
NC
EE_DAT
EE_CLK
EE_CS/EFP/EPH
MUTE_A
MUTE_DA
REG1
REG2
REG3
REG4
REG5
REG6
REG7
REG8
LM_1
PA_LVL
PLLCE
RDS_DA
RDS_CLK
MODE_A
F_HOP
BYTE
CNVSS
XC_IN
XC_OUT
/RESET
X_OUT
VSS
XIN
VCC
/NMI
RMT
ST/DO
SYNC
SD
NC
SW_LV-1
SW_LV-2
ASP_DA
ASP_CLK
10DB_ATT
PLL_DAT
PLL_CLK
AVSS
VREF
AVCC
DEMO
R2848 100
R2847 100
R2849 1K
R2843 1K
W2557 0
R2846 4.7K
R2845 10K
R2844 10K
W2523 0
R2842 10K
R2841 10K
W2526 0
SW15V
ASP_CLK
ASP_DA
+15V
MUTE_A
-9V
A_GND
HP_L
HP_R
VREF+
IC2871 E-EPROM IC (NOT SUPPLIED)
IC2871
NC
VCC
EE_CS
EE_CLK
NC
GND
EE.DAT
C2872 0.022
C2871 330P
R2871 22K
R2873 22K
R2874 4.7K
C2874 330P
W2576 0
W2536 0
W2537 0
STANDBY
IDCDET
PCONT
MUTE_A
MUTE_D_AMP
W2532 0
W2571 0
W2572 0
FAN
MOT_12V
Q29
B1ACKD
FAN MOTOR ON
R2945 10K
C2945 16V47
C2944 100P
R2944 4.7K
D2946 B0ADCJ000020
R2942 5.6K
R2943 10K
R2949 47K
R2948 100
C2947 6.3V100
R2946 56K
R2947 27
W2573 0
R2823 10K
R2824 10K
W2547 0
W2548 0
R2851 47K
W2549 0
R2820 100K
R2819 100K
R2818 100K
R2817 100K
R2830 100K
R2831 100K
R2832 100K
R2833 100K
C2853 0.1
C2854 6.3V220
R2810 22K
W2543 0
W2545 0
R2802 100
R2803 10K
C2821 100P
W2544 0
Q2803 B1GBCFJJ0051 RESET (MICRO-P) SWITCH
R2883 330K
C2883 18P
R2886 1M
R2881 220
R2882 10M
X2801 H0A327200115
C2882 18P
X2802 H2B100500004
C2803 1
D2803 B0ACCK000005
C2802 50V2.2
W2552 0
UP_GND
DVREF+
PLLCE_UP
F_HOP
IRESET
VCC
RMT
BLKCK
SYNC
STIDO
SD
SW_LVL1
SW_LVL2
ASP_DA
ASP_CLK
PLL_DA
PLL_CLK
VREF+
CHG_CCW
CHG_CW
P_GND
CD8V
HOME_SW
ST-SW
OPEN_SW
CLOSE_SW
SW5V
D_GND
PLAY_SW
UD_SENSOR
BOTTOM_SW
SPEED
W2559 0
W2555 0
D2936 B0EAKM000117
Q2936
R2937 10K
R2936 1K
W2556 0
MOT_12V
CHG_PLR(88)
W2560 0
Q2937
CCW
CW
P_GND
VC_8V
HOME_SW
ST-SW
OPEN_SW
CAM_SENSOR
SW5V
D_GND
PLAY_SW
PLUNGER
UD_SENSOR
BOTTOM_SW
SPEED
CN2805
TO CRS1 (CN1)
+15V
HP_L
HP_GND
HP_R
DGND
SW5V
W2539 0
PA_IN_L
PA_IN_GND
PA_IN_R
MOT10V
SW_LED
VOL_LED
J_VOLA
J_VOL_B
FL_RST
FL_CS
FL_DOUT
FL_CLK
H_BASS_LED
KEY3
KEY2
KEY1
P-GND
RMT
VREF+
SYNC
PCONT
SYS6V
CN2806
TO C PANEL CIRCUIT (CN6601) ON SCHEMATIC DIAGRAM-4
3/4

SA-AK240GT MAIN CIRCUIT

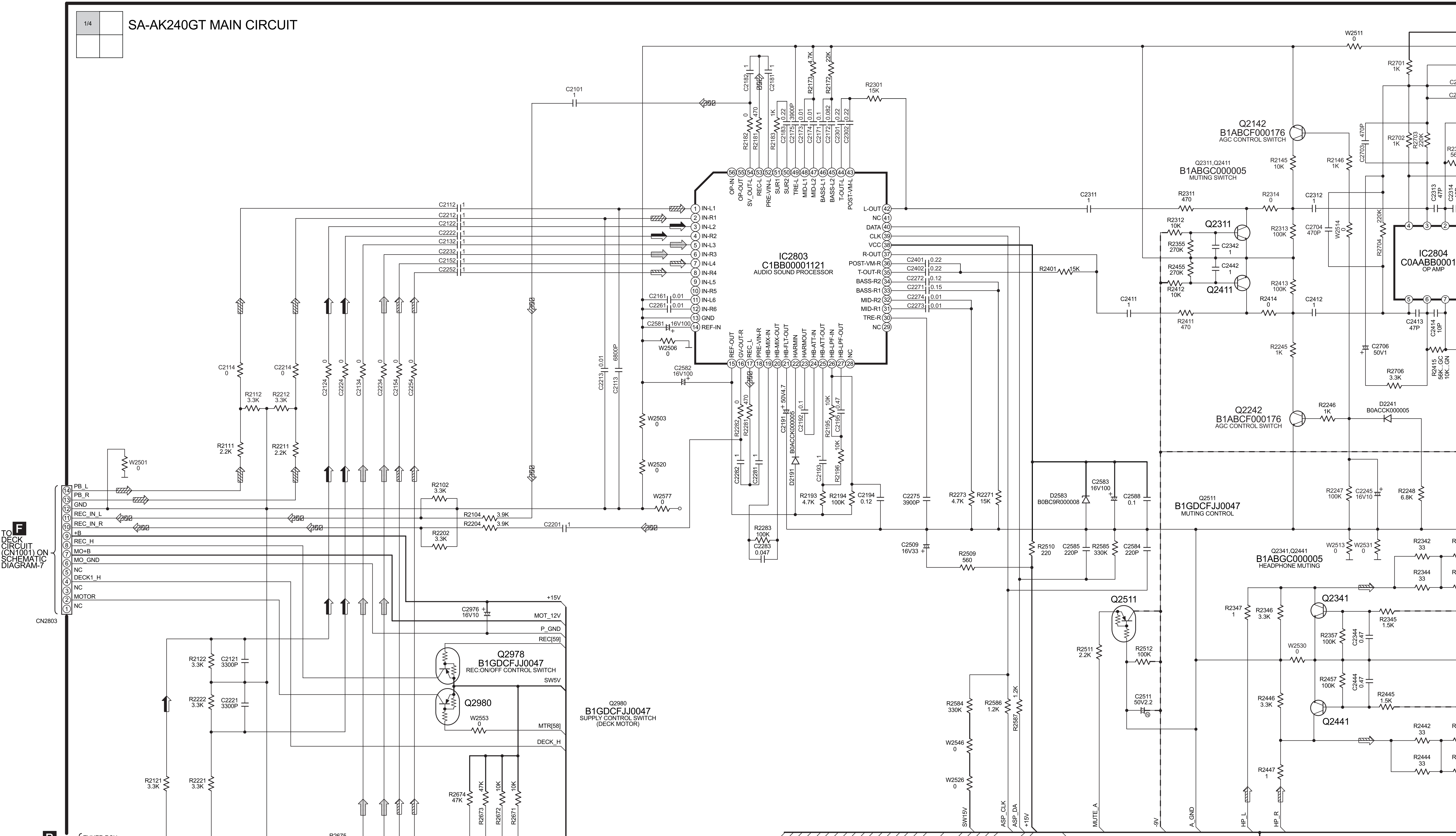
SA-AK240GT MAIN CIRCUIT

2/4


W2511 0
C2701 0.01
R2701 1K
C2702 16V100
C2705 50V1
R2705 3.3K
Q2142
B1ABCF000176
AGC CONTROL SWITCH
C2703 470P
R2702 1K
R2703 220K
R2315 56K
C2315 16V22
R2316 2.2K
R2145 10K
R2146 1K
Q2311,Q2411
B1ABGC000005
MUTING SWITCH
C2311 1
R2311 470
R2314 0
C2312 1
C2313 47P
C2314 10P
R2312 10K
Q2311
R2355 270K
C2342 1
R2455 270K
C2442 1
R2412 10K
Q2411
R2313 100K
C2704 470P
W2514 0
R2704 220K
IC2804
C0AABB000125
OP AMP
R2413 100K
R2401 15K
C2411 1
R2411 470
R2414 0
C2412 1
C2413 47P
C2414 10P
C2415 16V22
R2415 56K...GC 10K...GN
C2706 50V1
R2706 3.3K
R2245 1K
R2416 2.2K
R2317 10K
Q2317
R2318 100K
R2356 180K
C2343 0.47
W2508 0
R2456 180K
C2443 0.47
R2417 10K
Q2417
R2418 100K
Q2317,Q2417
B1ABGC000005
MUTING SWITCH
R2329 10K
C2329 4700P
C2321 1
R2321 0
W2510 0
R2330 3.9K
C2330 0.22
C2436 0.22
R2436 3.9K
R2435 10K
C2431 1
C2437 4700P
C2711 16V100
C2712 50V0.01
W2512 0
R2431 0
C2433 1
R2434 0
C2325 50V1
R2326 0
R2328 15K
R2430 0
R2437 15K
C2943 50V2.2
F_HOP ①
T-GND ②
MUTE-D-AMP ③
+15V ④
HIGH_L-IN ⑤
HIGH_R-IN ⑥
ASP_GND ⑦
LOW_L-IN ⑧
LOW_R-IN ⑨
A_GND ⑩
⑪
FAN ⑫
CN2809
TO E POWER CIRCUIT (CN5102) ON SCHEMATIC DIAGRAM-6
0.22
0.22
0.12
0.15
0.01
0.01
Q2242
B1ABCF000176
AGC CONTROL SWITCH
R2246 1K
D2241
B0ACCK000005
D2583
B0BC9R000008
C2583 16V100
C2588 0.1
R2273 4.7K
R2271 15K
Q2511
B1GDCFJJ0047
MUTING CONTROL
R2247 100K
C2245 16V10
R2248 6.8K
R2510 220
C2585 220P
R2585 330K
C2584 220P
R2509 560
W2513 0
W2531 0
R2342 33
R2341 33
R2352 33
R2351 33
Q2341,Q2441
B1ABGC000005
HEADPHONE MUTING
R2344 33
R2343 33
R2354 33
R2353 33
Q2511
R2347 1
R2346 3.3K
Q2341
R2345 1.5K
R2357 100K
C2344 0.47
C2341 1000P
R2511 2.2K
R2512 100K
W2530 0
R2457 100K
C2444 0.47
C2441 1000P
C2511 50V2.2
R2446 3.3K
R2445 1.5K
Q2441
R2584 330K
R2586 1.2K
R2587 1.2K
R2442 33
R2441 33
R2452 33
R2451 33
R2444 33
R2443 33
R2454 33
R2453 33
W2546 0
W2526 0
R2447 1
SW15V
ASP_CLK
ASP_DA
+15V
MUTE_A
-9V
A_GND
HP_L
HP_R
+15V
F_HOP

B MAIN CIRCUIT

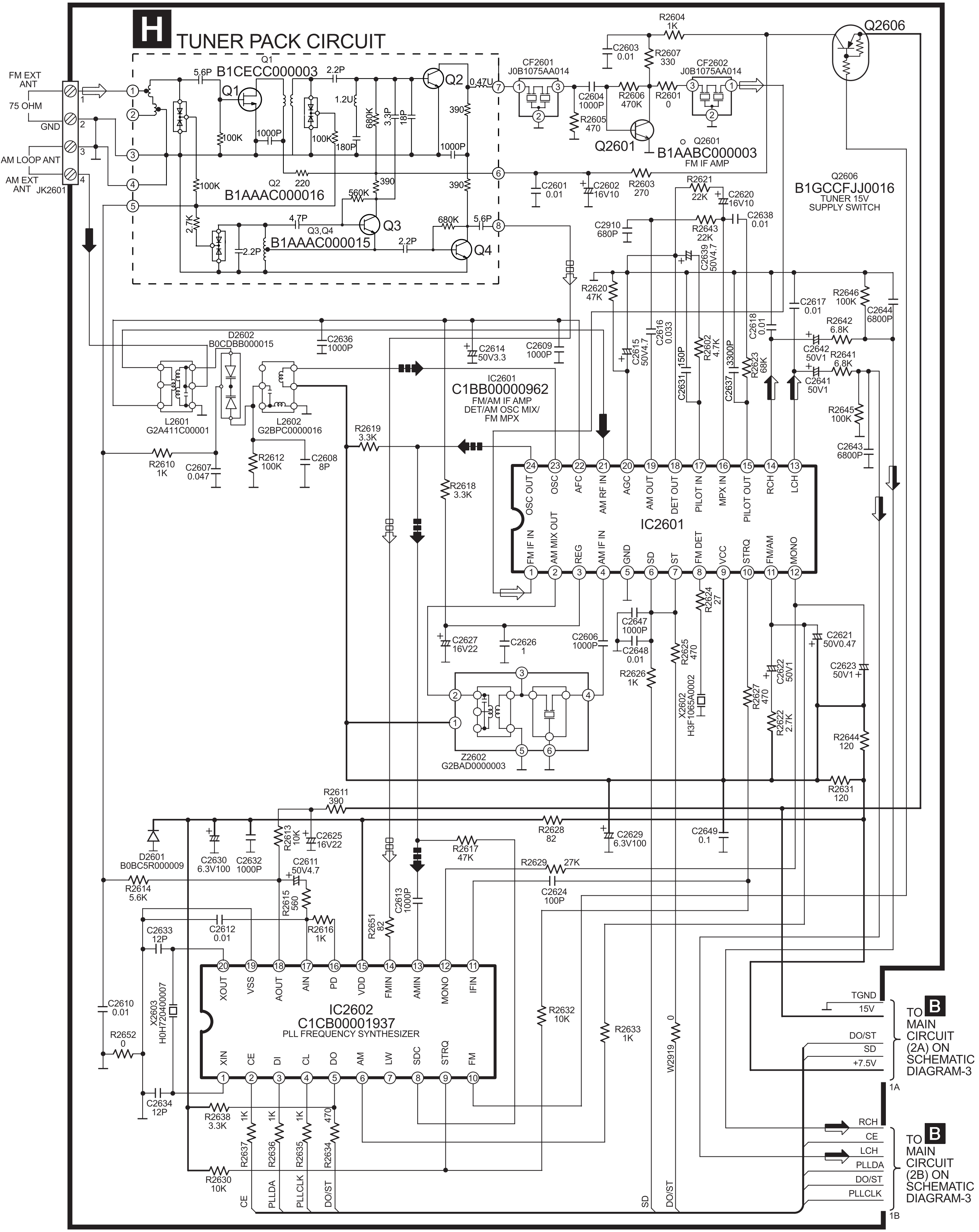
——— : +B SIGNAL
– – : -B SIGNAL
➡ : FM/AM SIGNAL LINE
⇨ : MAIN SIGNAL LINE
⇨ : TAPE RECORD SIGNAL LINE
⇨ : TAPE PLAYBACK SIGNAL LINE
⇨ : CD SIGNAL LINE


1/4
SA-AK240GT MAIN CIRCUIT
IC2803
C1BB00001121
AUDIO SOUND PROCESSOR
IN-L1
IN-R1
IN-L2
IN-R2
IN-L3
IN-R3
IN-L4
IN-R4
IN-L5
IN-R5
IN-L6
IN-R6
GND
REF-IN
OP-IN
OP-OUT
SV_OUT-L
REC-L
PRE-VIN-L
SUR1
SUR2
TRE-L
MID-L1
MID-L2
BASS-L1
BASS-L2
T-OUT-L
POST-VM-L
L-OUT
NC
DATA
CLK
VCC
R-OUT
POST-VM-R
T-OUT-R
BASS-R2
BASS-R1
MID-R2
MID-R1
TRE-R
REF-OUT
GV-OUT-R
REC_L
PRE-VIN-R
HB-MIX-IN
HB-MIX-OUT
HB-FLT-OUT
HARMIN
HARMOUT
HB-ATT-IN
HB-ATT-OUT
HB-LPF-IN
HB-LPF-OUT
Q2142
B1ABCF000176
AGC CONTROL SWITCH
Q2311,Q2411
B1ABGC000005
MUTING SWITCH
Q2311
Q2411
IC2804
C0AABB0001
OP AMP
Q2242
B1ABCF000176
AGC CONTROL SWITCH
D2241
B0ACCK000005
D2583
B0BC9R000008
Q2511
B1GDCFJJ0047
MUTING CONTROL
Q2341,Q2441
B1ABGC000005
HEADPHONE MUTING
Q2511
Q2341
Q2441
Q2978
B1GDCFJJ0047
REC:ON/OFF CONTROL SWITCH
Q2980
Q2980
B1GDCFJJ0047
SUPPLY CONTROL SWITCH
(DECK MOTOR)
TO F DECK CIRCUIT (CN1001) ON SCHEMATIC DIAGRAM-7
CN2803
PB_L
PB_R
GND
REC_IN_L
REC_IN_R
+B
REC_H
MO+B
MO_GND
NC
DECK1_H
NC
MOTOR
NC
+15V
MOT_12V
P_GND
REC[59]
SW5V
MTR[58]
DECK_H
SW15V
ASP_CLK
ASP_DA
+15V
MUTE_A
-9V
A_GND
HP_L
HP_R
C2101 1
C2112 1
C2212 1
C2122 1
C2222 1
C2132 1
C2232 1
C2152 1
C2252 1
C2161 0.01
C2261 0.01
C2581 16V100
W2506 0
C2582 16V100
W2503 0
W2520 0
W2577 0
C2213 0.01
C2113 6800P
C2114 0
C2214 0
R2112 3.3K
R2212 3.3K
R2111 2.2K
R2211 2.2K
W2501 0
R2102 3.3K
R2104 3.9K
R2204 3.9K
R2202 3.3K
C2201 1
C2976 16V10
R2122 3.3K
C2121 3300P
R2222 3.3K
C2221 3300P
R2121 3.3K
R2221 3.3K
W2553 0
R2674 47K
R2673 47K
R2672 10K
R2671 10K
C2182 1
C2181 1
R2182 0
R2181 470
R2183 1K
C2183 0.22
C2175 3900P
C2173 0.01
C2174 0.01
C2171 0.1
C2172 0.082
C2301 0.22
C2302 0.22
R2173 4.7K
R2172 22K
R2301 15K
C2401 0.22
C2402 0.22
C2272 0.12
C2271 0.15
C2274 0.01
C2273 0.01
R2401 15K
R2282 0
R2281 470
C2282 1
C2281 1
C2191 50V4.7
C2192 0.1
D2191 B0ACCK000005
R2195 10K
C2195 0.47
R2196 10K
C2193 1
R2193 4.7K
R2194 100K
C2194 0.12
R2283 100K
C2283 0.047
C2275 3900P
R2273 4.7K
R2271 15K
C2509 16V33
R2509 560
R2510 220
C2585 220P
R2585 330K
C2584 220P
C2583 16V100
C2588 0.1
R2584 330K
R2586 1.2K
R2587 1.2K
W2546 0
W2526 0
R2511 2.2K
R2512 100K
C2511 50V2.2
C2311 1
R2311 470
R2314 0
C2312 1
R2312 10K
R2313 100K
R2355 270K
C2342 1
R2455 270K
C2442 1
R2412 10K
R2413 100K
C2411 1
R2411 470
R2414 0
C2412 1
R2145 10K
R2146 1K
R2245 1K
R2246 1K
C2704 470P
W2514 0
R2704 220K
C2703 470P
R2702 1K
R2703 220K
R2701 1K
W2511 0
C2313 47P
C2314
C2413 47P
C2414 10P
C2706 50V1
R2706 3.3K
R2415 56K...GC 10K...GN
R2247 100K
C2245 16V10
R2248 6.8K
W2513 0
W2531 0
R2342 33
R2344 33
R2347 1
R2346 3.3K
R2345 1.5K
R2357 100K
C2344 0.47
W2530 0
R2457 100K
C2444 0.47
R2445 1.5K
R2446 3.3K
R2442 33
R2444 33
R2447 1
R2675

SCHEMATIC DIAGRAM - 2

—— : +B SIGNAL LINE
⇨ : FM SIGNAL LINE
➡ : AM SIGNAL LINE
➡ : FM/AM SIGNAL LINE
▭▭⇨ : FM OSC SIGNAL LINE
■■➡ : AM OSC SIGNAL LINE

B MAIN(TUNER) CIRCUIT

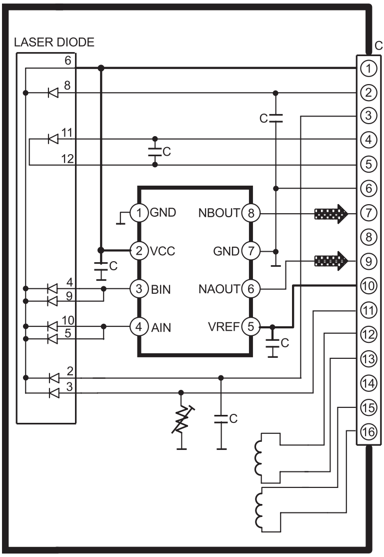


H TUNER PACK CIRCUIT
FM EXT ANT
75 OHM
GND
AM LOOP ANT
AM EXT ANT
JK2601
Q1 B1CECC000003
Q2 B1AAAC000016
Q3,Q4 B1AAAC000015
Q2601 B1AABC000003 FM IF AMP
Q2606 B1GCCFJJ0016 TUNER 15V SUPPLY SWITCH
CF2601 J0B1075AA014
CF2602 J0B1075AA014
R2604 1K
C2603 0.01
R2607 330
C2604 1000P
R2606 470K
R2601 0
R2605 470
C2601 0.01
C2602 16V10
R2603 270
R2621 22K
C2620 16V10
C2638 0.01
C2910 680P
R2643 22K
C2639 50V4.7
R2620 47K
C2617 0.01
R2646 100K
C2644 6800P
R2642 6.8K
C2642 50V1
R2641 6.8K
C2641 50V1
R2645 100K
C2643 6800P
D2602 B0CDBB000015
C2636 1000P
C2614 50V3.3
C2609 1000P
C2615 50V4.7
C2616 0.033
R2602 4.7K
C2618 0.01
C2631 150P
C2637 3300P
R2623 68K
IC2601 C1BB00000962 FM/AM IF AMP DET/AM OSC MIX/ FM MPX
L2601 G2A411C00001
L2602 G2BPC0000016
R2619 3.3K
R2610 1K
C2607 0.047
R2612 100K
C2608 8P
R2618 3.3K
OSC OUT
OSC
AFC
AM RF IN
AGC
AM OUT
DET OUT
PILOT IN
MPX IN
PILOT OUT
RCH
LCH
FM IF IN
AM MIX OUT
REG
AM IF IN
GND
SD
ST
FM DET
VCC
STRQ
FM/AM
MONO
C2627 16V22
C2626 1
C2606 1000P
C2647 1000P
C2648 0.01
R2624 27
R2626 1K
R2625 470
X2602 H3F1065A0002
C2621 50V0.47
C2623 50V1
C2622 50V1
R2627 470
R2622 2.7K
R2644 120
R2631 120
Z2602 G2BAD0000003
R2611 390
R2628 82
C2629 6.3V100
C2649 0.1
D2601 B0BC5R000009
C2630 6.3V100
C2632 1000P
R2613 10K
C2625 16V22
C2611 50V4.7
R2617 47K
R2629 27K
C2624 100P
R2614 5.6K
R2615 560
R2616 1K
R2651 82
C2613 1000P
C2633 12P
C2612 0.01
IC2602 C1CB00001937 PLL FREQUENCY SYNTHESIZER
XOUT
VSS
AOUT
AIN
PD
VDD
FMIN
AMIN
MONO
IFIN
XIN
CE
DI
CL
DO
AM
LW
SDC
STRQ
FM
C2610 0.01
R2652 0
X2603 H0H720400007
C2634 12P
R2632 10K
R2633 1K
W2919 0
R2638 3.3K
R2637 1K
R2636 1K
R2635 1K
R2634 470
R2630 10K
CE
PLLDA
PLLCLK
DO/ST
SD
DO/ST
TGND
15V
DO/ST
SD
+7.5V
1A
TO B MAIN CIRCUIT (2A) ON SCHEMATIC DIAGRAM-3
RCH
CE
LCH
PLLDA
DO/ST
PLLCLK
1B
TO B MAIN CIRCUIT (2B) ON SCHEMATIC DIAGRAM-3

SA-AK240GT MAIN(TUNER) CIRCUIT

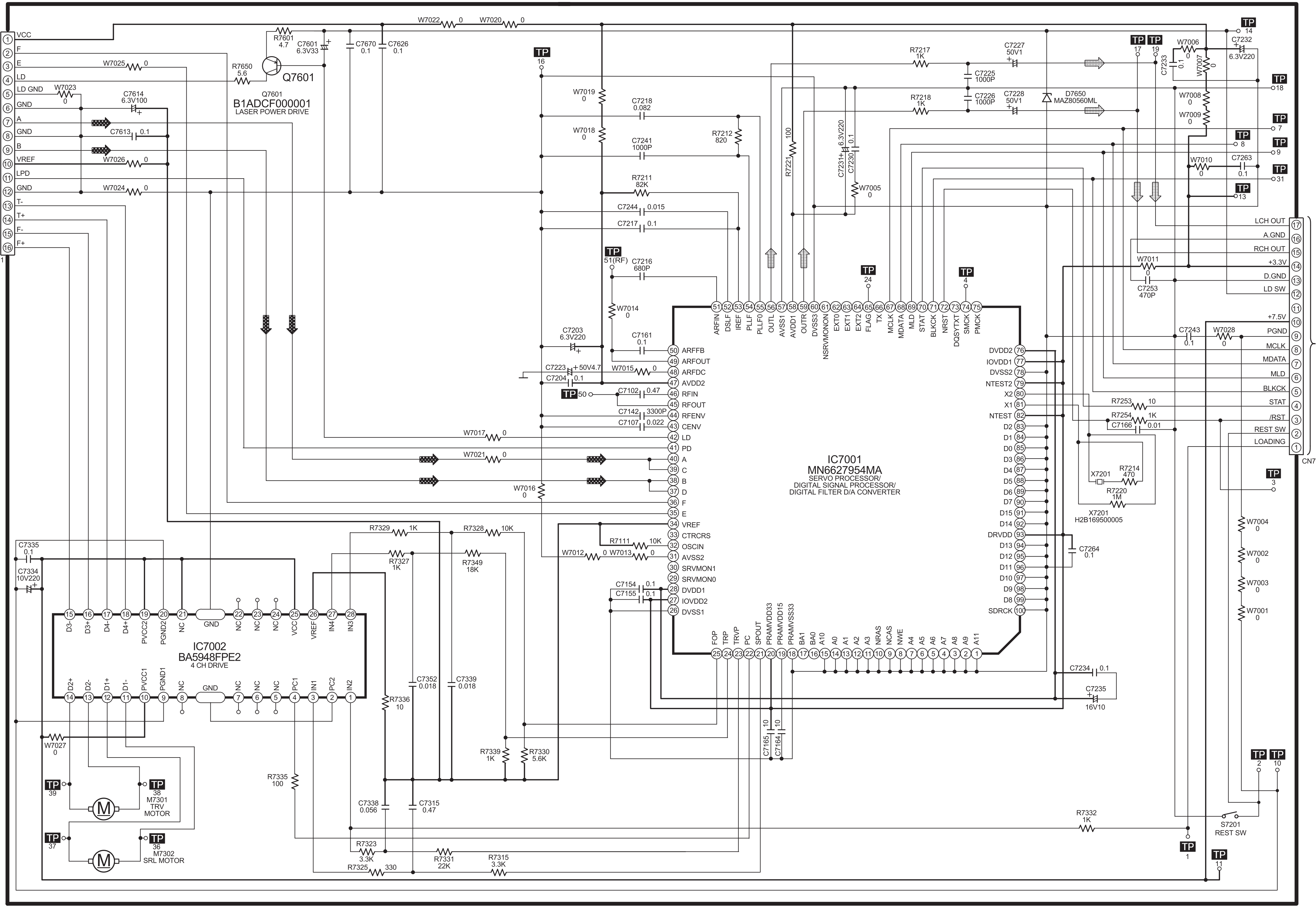
SCHEMATIC DIAGRAM - 1

OPTICAL PICKUP CIRCUIT


LASER DIODE
CP701
GND
NBOUT
VCC
GND
BIN
NAOUT
AIN
VREF
C

A CD SERVO CIRCUIT

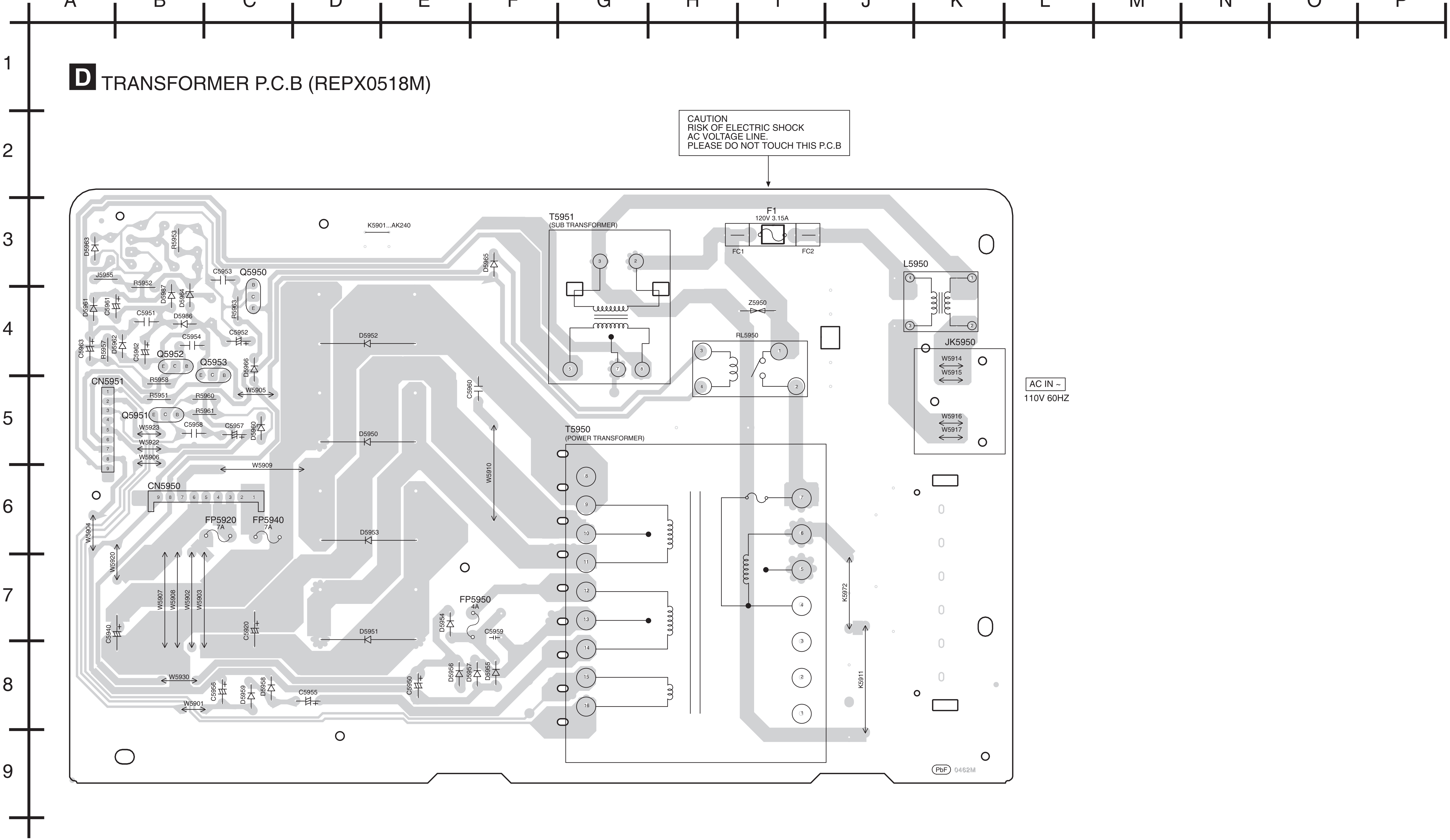
— : +B SIGNAL LINE ▩ : CD-DA SIGNAL LINE ▨ : CD SIGNAL LINE


CN7001
VCC
F
E
LD
LD GND
GND
A
GND
B
VREF
LPD
GND
T-
T+
F-
F+
Q7601
B1ADCF000001
LASER POWER DRIVE
R7601 4.7
R7650 5.6
C7601 6.3V33
C7670 0.1
C7626 0.1
W7022 0
W7020 0
W7025 0
W7023 0
C7614 6.3V100
C7613 0.1
W7026 0
W7024 0
TP 16
W7019 0
W7018 0
C7218 0.082
C7241 1000P
R7212 820
R7211 82K
C7244 0.015
C7217 0.1
TP 51(RF)
C7216 680P
W7014 0
C7203 6.3V220
C7161 0.1
C7223 50V4.7
C7204 0.1
W7015 0
TP 50
C7102 0.47
C7142 3300P
C7107 0.022
W7017 0
W7021 0
W7016 0
R7111 10K
W7012 0
W7013 0
C7154 0.1
C7155 0.1
R7217 1K
R7218 1K
C7227 50V1
C7225 1000P
C7226 1000P
C7228 50V1
D7650 MAZ80560ML
R7221 100
C7231 6.3V220
C7230 0.1
W7005 0
TP 17
TP 19
C7233 0.1
W7006 0
W7007 0
C7232 6.3V220
TP 14
TP 18
W7008 0
W7009 0
TP 7
TP 8
TP 9
W7010 0
C7263 0.1
TP 31
TP 13
TP 24
TP 4
IC7001
MN6627954MA
SERVO PROCESSOR/
DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER D/A CONVERTER
ARFIN DSLF IREF PLLF PLLF0 OUTL AVSS1 AVDD1 OUTR DVSS3 NSRVMONON EXT0 EXT1 EXT2 FLAG TX MCLK MDATA MLD STAT BLKCK NRST DQSYTXT SMCK PMCK
ARFFB ARFOUT ARFDC AVDD2 RFIN RFOUT RFENV CENV LD PD A C B D F E VREF CTRCRS OSCIN AVSS2 SRVMON1 SRVMON0 DVDD1 IOVDD2 DVSS1
DVDD2 IOVDD1 DVSS2 NTEST2 X2 X1 NTEST D2 D1 D0 D3 D4 D5 D6 D7 D15 D14 DRVDD D13 D12 D11 D10 D9 D8 SDRCK
FOP TRP TRVP PC SPOUT PRAMVDD33 PRAMVDD15 PRAMVSS33 BA1 BA0 A10 A0 A1 A2 A3 NRAS NCAS NWE A4 A5 A6 A7 A8 A9 A11
R7253 10
R7254 1K
C7166 0.01
X7201
R7214 470
R7220 1M
X7201 H2B169500005
C7264 0.1
C7234 0.1
C7235 16V10
C7165 10
C7164 10
W7011 0
C7253 470P
C7243 0.1
W7028 0
LCH OUT
A.GND
RCH OUT
+3.3V
D.GND
LD SW
+7.5V
PGND
MCLK
MDATA
MLD
BLKCK
STAT
/RST
REST SW
LOADING
CN7002
TO B MAIN CIRCUIT (CN2801) ON SCHEMATIC DIAGRAM-3
TP 3
W7004 0
W7002 0
W7003 0
W7001 0
TP 2
TP 10
R7332 1K
S7201 REST SW
TP 1
TP 11
C7335 0.1
C7334 10V220
R7329 1K
R7328 10K
R7327 1K
R7349 18K
IC7002
BA5948FPE2
4 CH DRIVE
D3- D3+ D4- D4+ PVCC2 PGND2 NC GND NC NC NC VCC VREF IN4 IN3
D2+ D2- D1+ D1- PVCC1 PGND1 NC GND NC NC NC PC1 IN1 PC2 IN2
R7336 10
C7352 0.018
C7339 0.018
R7339 1K
R7330 5.6K
W7027 0
TP 39
TP 38
M7301 TRV MOTOR
TP 37
TP 36
M7302 SRL MOTOR
R7335 100
C7338 0.056
C7315 0.47
R7323 3.3K
R7325 330
R7331 22K
R7315 3.3K

SA-AK240GT CD SERVO CIRCUIT

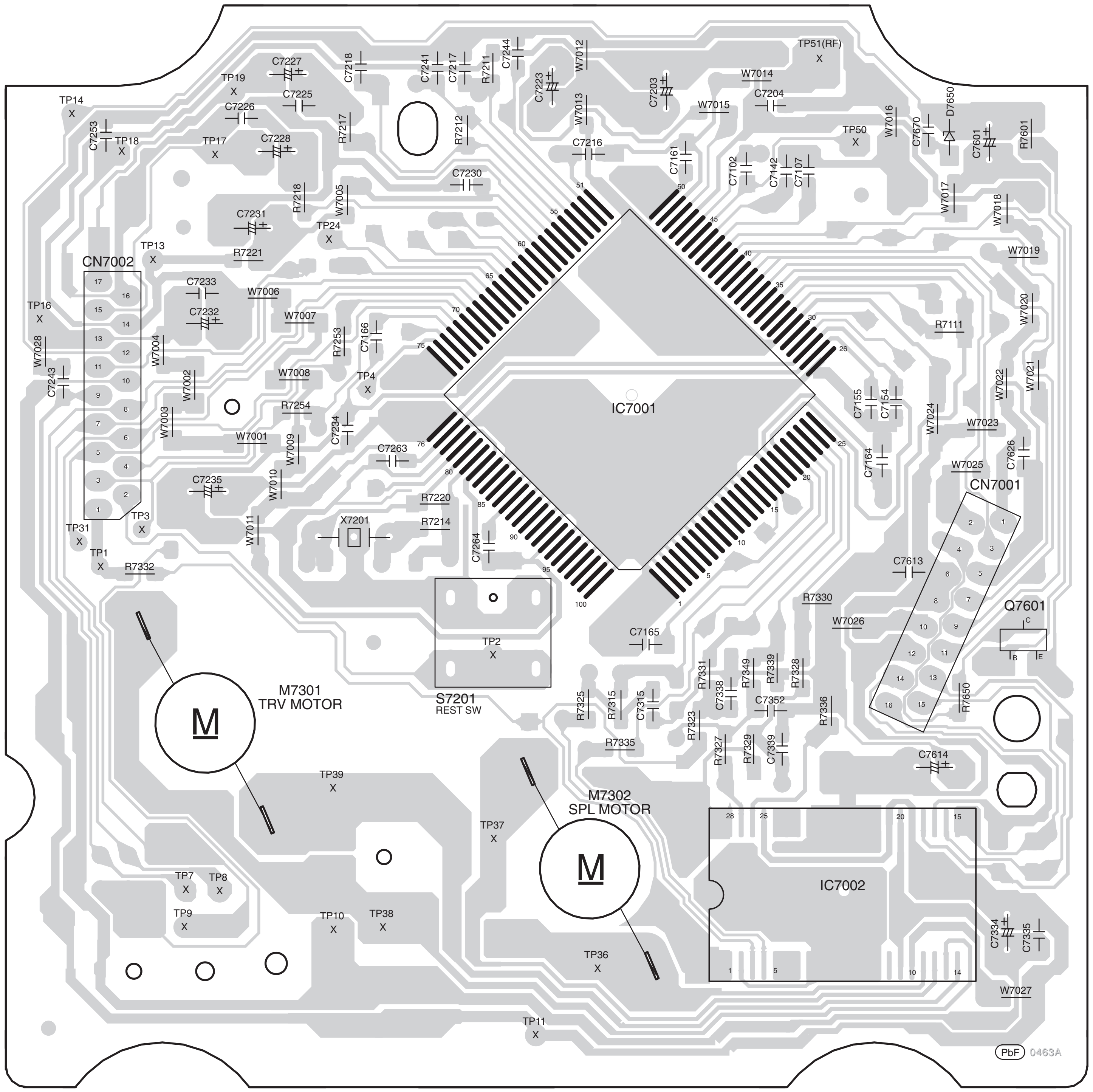
D TRANSFORMER P.C.B (REPX0518M)

CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE.
PLEASE DO NOT TOUCH THIS P.C.B



A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
1
2
3
4
5
6
7
8
9
K5901...AK240
T5951
(SUB TRANSFORMER)
F1
120V 3.15A
FC1
FC2
L5950
Z5950
RL5950
JK5950
W5914
W5915
W5916
W5917
AC IN ~
110V 60HZ
D5963
R5953
J5955
C5953
Q5950
R5952
D5987
D5964
R5963
D5961
C5961
C5951
D5986
C5954
C5952
C5963
R5957
D5962
C5962
Q5952
Q5953
D5966
D5952
D5965
CN5951
R5958
W5905
R5951
R5960
Q5951
R5961
C5958
C5957
D5960
W5923
W5922
W5906
C5960
D5950
W5909
W5910
T5950
(POWER TRANSFORMER)
CN5950
FP5920
7A
FP5940
7A
W5904
W5920
D5953
K5972
W5907
W5908
W5902
W5903
FP5950
4A
C5940
C5920
D5954
C5959
D5951
K5911
W5930
C5956
D5959
D5958
C5955
C5950
D5956
D5957
D5955
W5901
PbF
0462M

A CD SERVO P.C.B (REPX0494A)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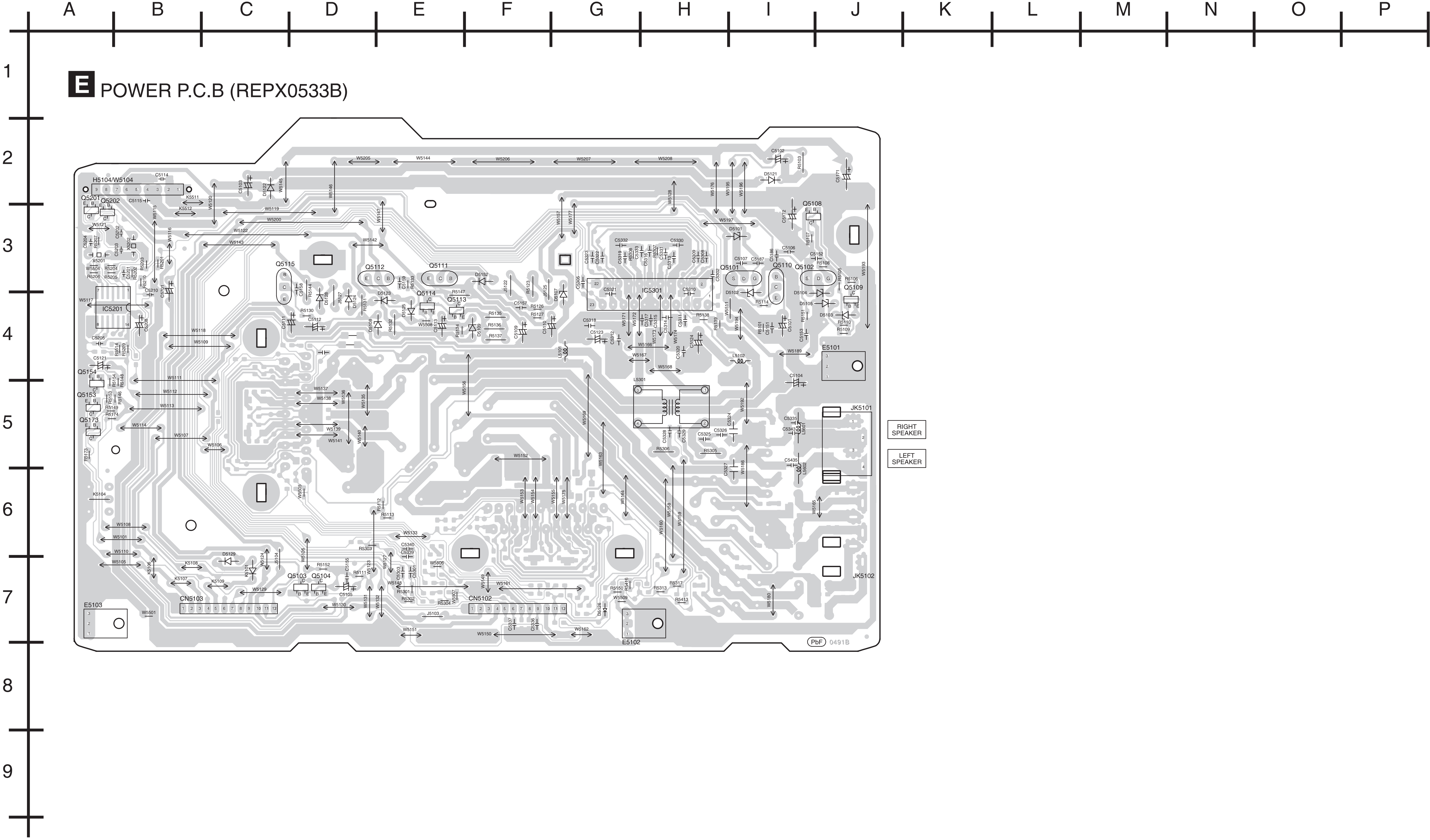
TP14
C7253
TP18
TP19
C7227
C7226
C7225
TP17
C7228
C7218
R7217
C7241
C7217
R7211
C7244
C7223
W7012
W7013
R7212
C7216
C7230
C7203
W7014
W7015
C7204
TP51(RF)
TP50
W7016
C7670
D7650
C7601
R7601
C7161
C7102
C7142
C7107
W7017
W7018
W7019
W7020
W7021
W7022
R7218
W7005
C7231
TP24
R7221
TP13
CN7002
C7233
W7006
C7232
W7007
TP16
W7028
C7243
W7004
W7002
W7003
W7008
R7253
C7166
TP4
R7254
C7234
W7001
W7009
C7263
C7235
W7010
W7011
R7220
R7214
X7201
C7264
TP31
TP3
TP1
R7332
IC7001
R7111
C7155
C7154
W7024
W7023
C7164
W7025
C7626
CN7001
C7613
Q7601
R7330
W7026
C7165
TP2
S7201
REST SW
R7325
R7315
C7315
R7331
C7338
R7349
R7339
R7328
C7352
R7336
R7323
R7327
R7329
C7339
R7335
R7650
C7614
M7301
TRV MOTOR
M
TP39
M7302
SPL MOTOR
M
TP37
IC7002
TP7
TP8
TP9
TP10
TP38
TP36
C7334
C7335
W7027
TP11
PbF
0463A

E POWER P.C.B (REPX0533B)



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H5104/W5104
Q5201
Q5202
IC5201
Q5154
Q5153
Q5173
Q5115
Q5112
Q5111
Q5114
Q5113
IC5301
Q5101
Q5110
Q5102
Q5108
Q5109
E5101
L5301
JK5101
RIGHT SPEAKER
LEFT SPEAKER
JK5102
E5103
CN5103
Q5103
Q5104
CN5102
E5102
L5101
L5102
D5101
D5102
D5103
D5104
D5105
D5121
D5129
D5152
W5205
W5144
W5206
W5207
W5208
W5119
W5200
W5122
W5143
W5118
W5109
W5111
W5112
W5113
W5114
W5107
W5106
W5108
W5101
W5110
W5105
W5129
W5130
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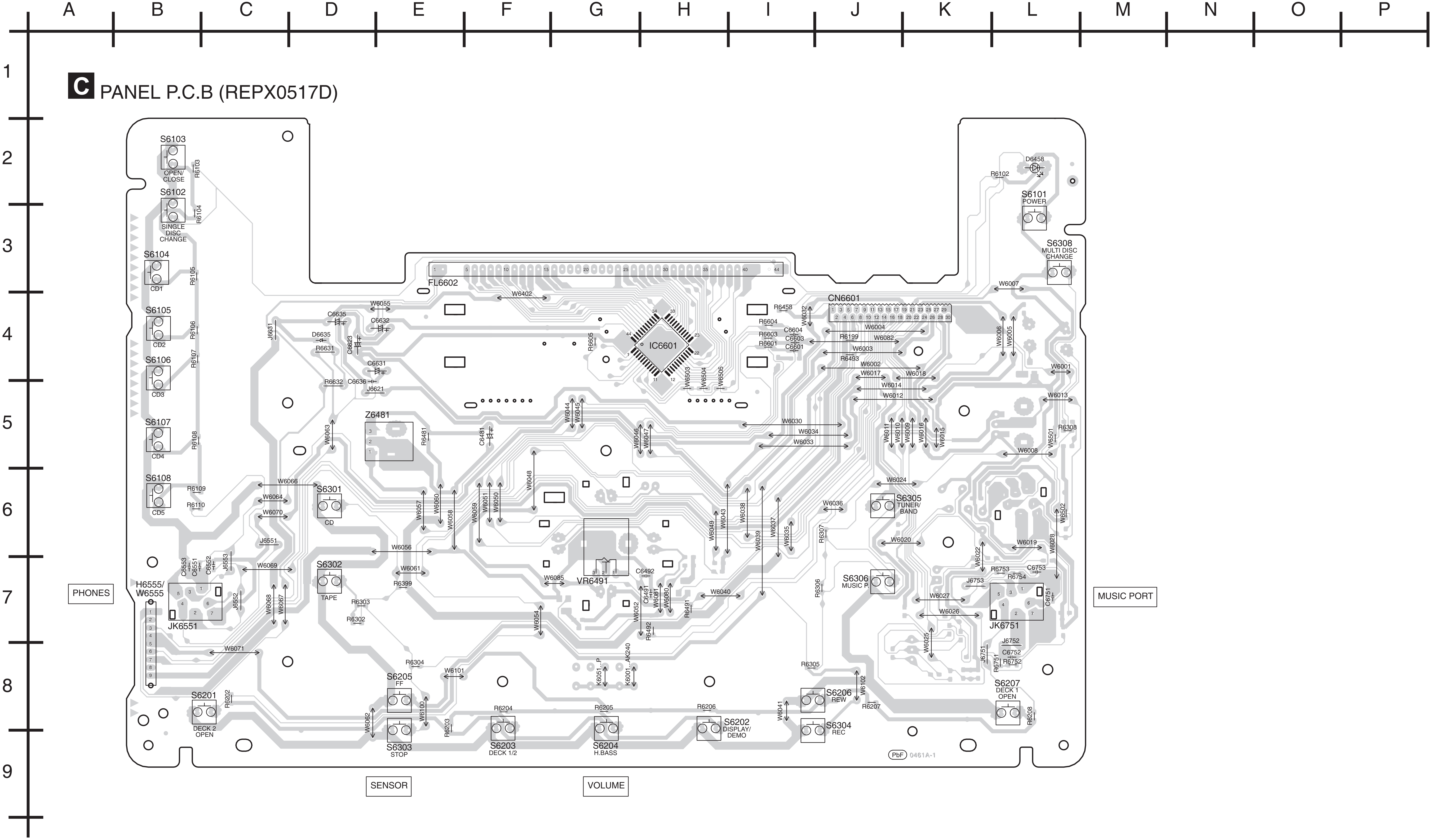
W5152
W5161
W5162
W5166
W5167
W5168
W5189
W5197
K5104
K5106
K5107
K5108
K5109
K5511
K5512
PbF
0491B

C PANEL P.C.B (REPX0517D)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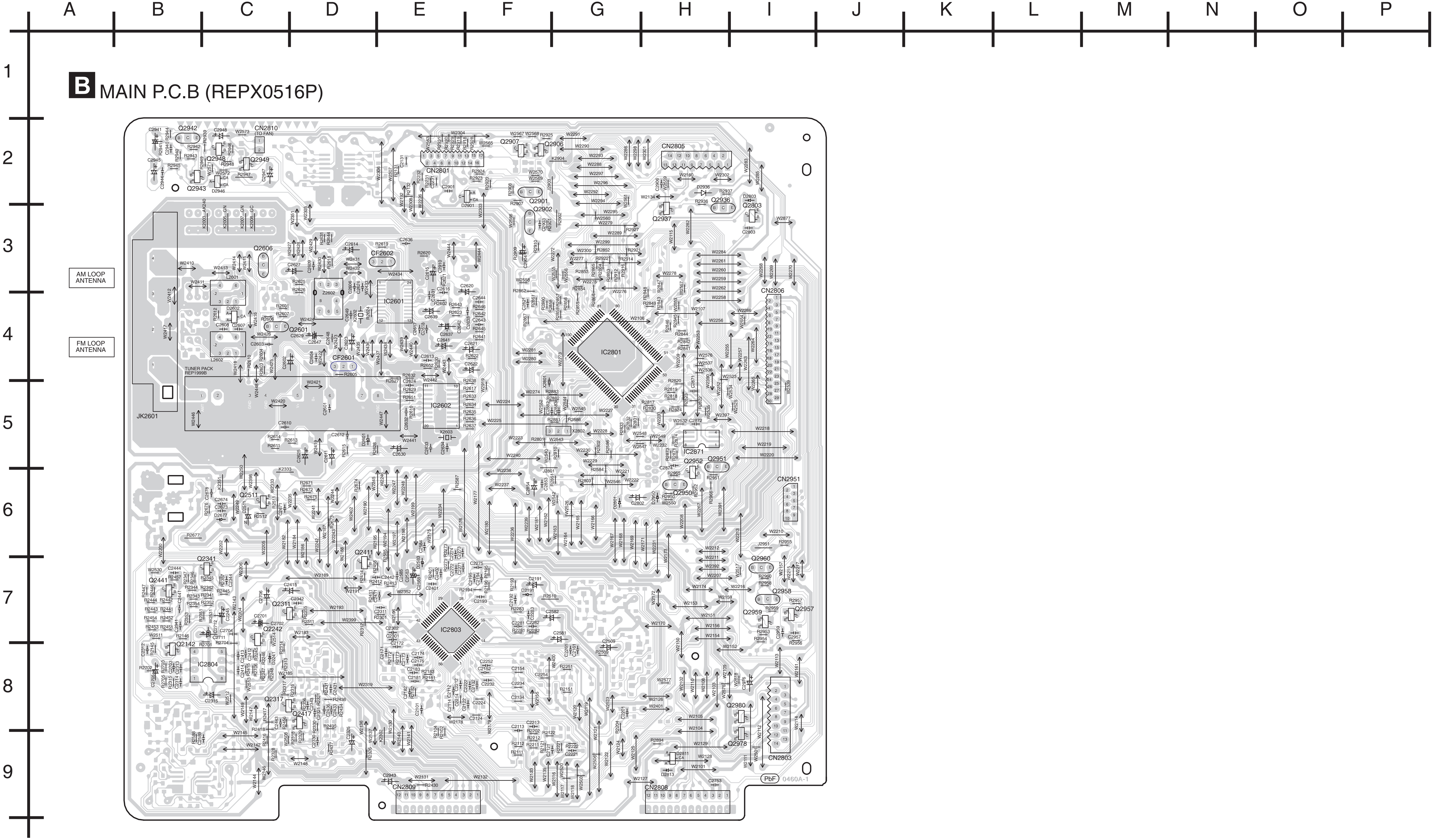
9
S6103
OPEN/CLOSE
R6103
S6102
SINGLE DISC CHANGE
R6104
S6104
CD1
R6105
S6105
CD2
R6106
S6106
CD3
R6107
S6107
CD4
R6108
S6108
CD5
R6109
R6110
FL6602
W6402
W6055
C6635
C6632
C6623
D6635
R6631
C6631
C6636
R6632
J6621
J6631
Z6481
R6481
C6481
IC6601
R6605
W6503
W6504
W6505
R6458
W6032
R6604
C6604
R6603
C6603
R6601
C6601
CN6601
W6004
R6199
W6082
W6003
R6493
W6002
W6017
W6018
W6014
W6012
W6030
W6034
W6033
W6044
W6045
W6046
W6047
W6048
W6063
W6066
W6064
W6070
J6551
W6069
W6056
W6061
W6057
W6060
W6058
W6059
W6051
W6050
S6301
CD
S6302
TAPE
R6399
R6303
R6302
R6304
W6068
W6067
W6071
W6101
W6100
W6062
C6553
C6551
C6552
J6553
J6552
H6555/W6555
JK6551
PHONES
VR6491
W6085
C6492
C6491
W6081
W6080
W6052
R6492
R6491
W6054
W6040
W6049
W6043
W6038
W6039
W6037
W6035
W6036
K6051...P
K6001...AK240
R6307
R6306
R6305
W6102
R6207
W6041
S6205
FF
S6303
STOP
S6201
DECK 2 OPEN
R6202
R6203
S6203
DECK 1/2
R6204
S6204
H.BASS
R6205
S6202
DISPLAY/DEMO
R6206
S6206
REW
S6304
REC
S6207
DECK 1 OPEN
R6208
S6305
TUNER/BAND
W6024
W6020
S6306
MUSIC P.
W6027
W6026
W6025
W6022
W6019
W6028
W6502
R6753
C6753
R6754
J6753
C6751
JK6751
J6752
C6752
R6752
J6751
R6751
MUSIC PORT
W6011
W6010
W6009
W6016
W6015
W6008
W6501
R6308
W6013
W6001
W6006
W6005
W6007
S6308
MULTI DISC CHANGE
S6101
POWER
R6102
D6458
SENSOR
VOLUME
PbF
0461A-1

B MAIN P.C.B (REPX0516P)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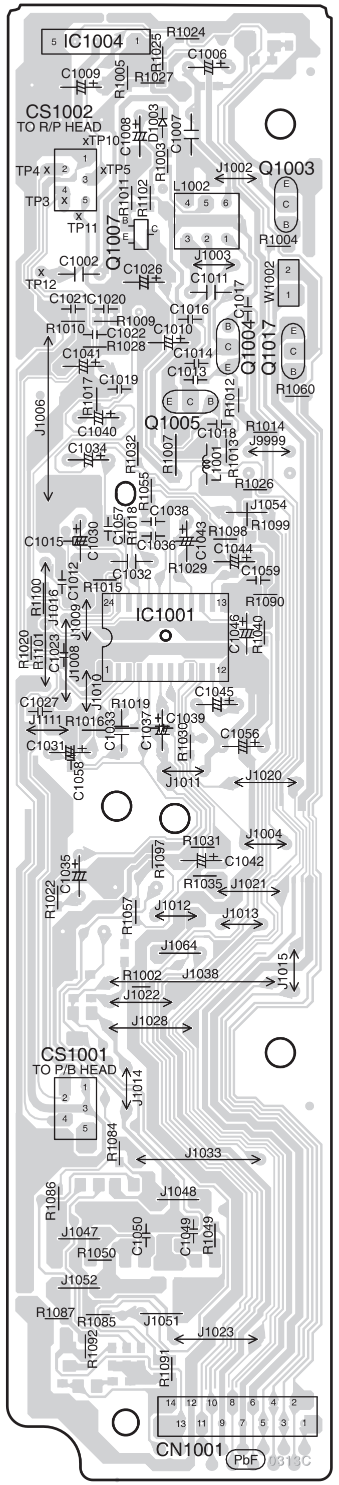
9
AM LOOP ANTENNA
FM LOOP ANTENNA
TUNER PACK REP1999B
JK2601
CN2810 (TO FAN)
CN2801
CN2805
CN2806
CN2951
CN2803
CN2808
CN2809
IC2601
IC2602
IC2801
IC2803
IC2804
IC2871
CF2601
CF2602
Z2602
X2602
X2603
L2601
L2602
Q2942
Q2943
Q2948
Q2949
Q2907
Q2906
Q2901
Q2902
Q2936
Q2937
Q2803
Q2606
Q2601
Q2511
Q2341
Q2441
Q2142
Q2311
Q2242
Q2317
Q2417
Q2411
Q2952
Q2951
Q2950
Q2960
Q2958
Q2957
Q2959
Q2980
Q2978
PbF
0460A-1

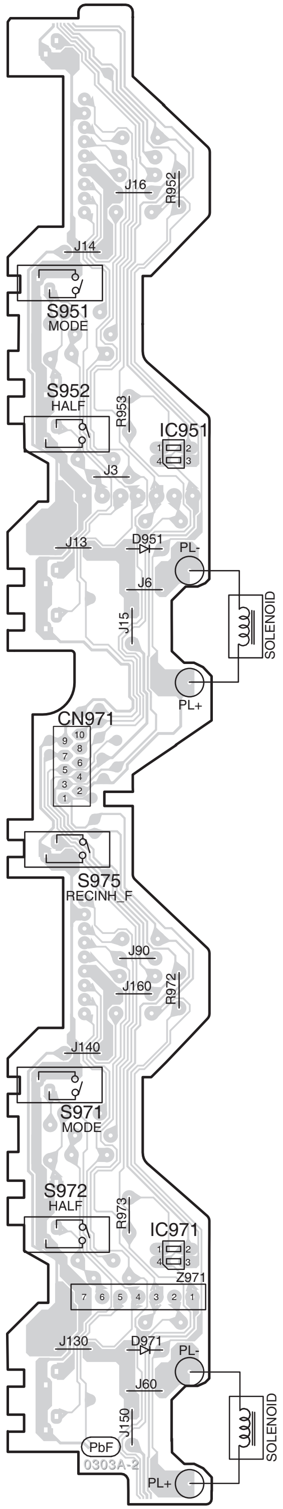
A B C D E F G H I J K L M N O P

1 2 3 4 5 6 7 8 9

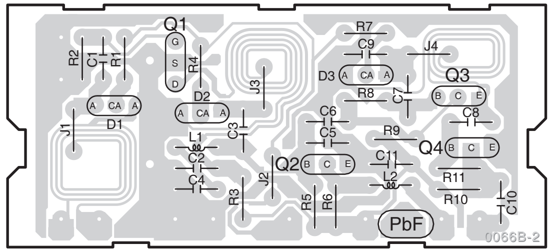
F DECK P.C.B (REPX0331E)


IC1004
CS1002
TO R/P HEAD
Q1003
Q1007
Q1004
Q1017
Q1005
IC1001
CS1001
TO P/B HEAD
CN1001
PbF
0313C

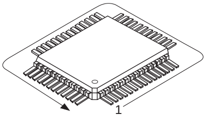
G DECK MECHANISM P.C.B. (REPX0321A)


S951
MODE
S952
HALF
IC951
D951
PL-
PL+
SOLENOID
CN971
S975
RECINH_F
S971
MODE
S972
HALF
IC971
Z971
D971
PL-
PL+
SOLENOID
PbF
0303A-2

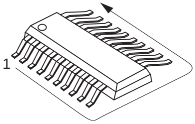
H TUNER PACK P.C.B (REP1999B)


Q1
D1
D2
D3
Q2
Q3
Q4
L1
L2
PbF
0066B-2

C1BB00001121 (100P)
C2CBYY000053 (100P)
C0HBB0000057 (44P)
MN6627954MA (100P)



AN7348S-E1 (24P)
C0JBAB000011 (14P)
C1BB00000962 (24P)
C1CB00001937 (20P)



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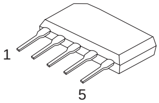

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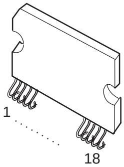
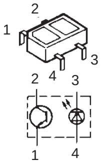


CNB13030R2AU (4P)



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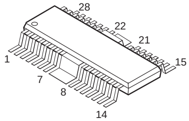
28
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21
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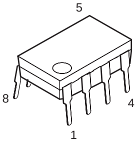
14
15

C0AABB000125



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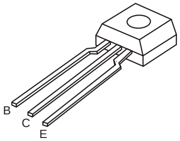

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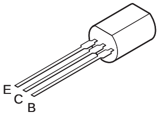

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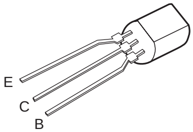

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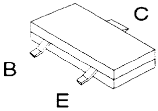

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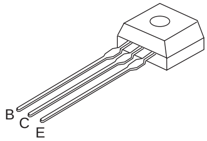

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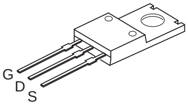

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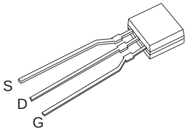

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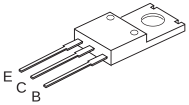

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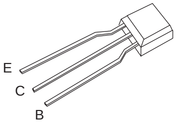

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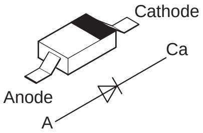
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Ca
Anode
A

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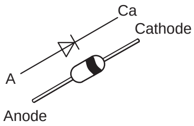
Ca
Cathode
A
Anode

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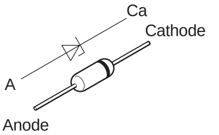
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Anode

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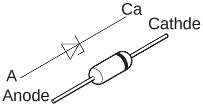
Ca
Cathde
A
Anode

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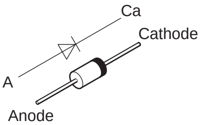
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Anode

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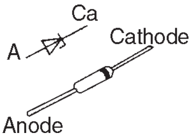
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Anode

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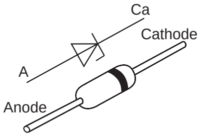
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Anode

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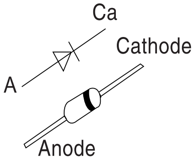
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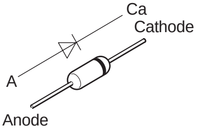
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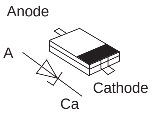
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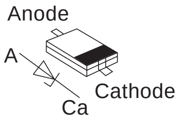
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Ca
Cathode

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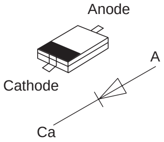
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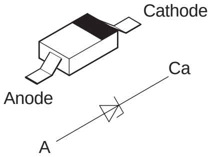
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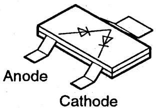
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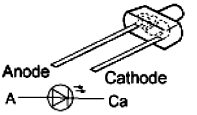
Anode
Cathode
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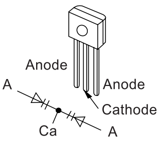
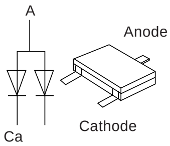
Ca

B0CDBB000015
B0CBAD000004


Anode
A
Anode
Cathode
Ca
A

B0ADCJ000020


A
Anode
Ca
Cathode

NOTE on CDs

- This unit can access up to 99 tracks.
- Choose disc with this mark.

COMPACT
disc
DIGITAL AUDIO

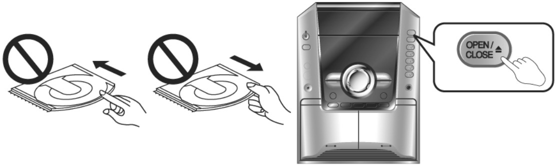
- This unit can play MP3 or WMA files and CD-DA format audio CD-R/RW that have been finalized.
- It may not be able to play some CD-R/RW due to the condition of the recording.
- Do not use irregularly shaped disc.
- Do not use disc with labels and stickers that are coming off or with adhesive exuding from under labels and stickers.
- Do not attach extra labels or stickers on the disc.
- Do not write anything on the disc.

Using DualDiscs

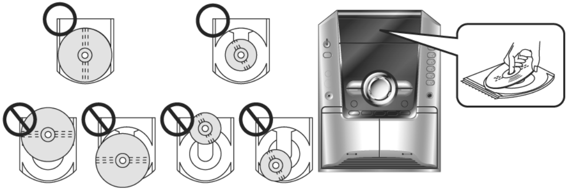
The “CD” sides of DualDiscs do not meet the CD-DA standard so it may not be possible to play them on this unit.

Not doing the following will cause damage to the unit.

- Press [⏻/I, POWER] to turn off the unit and remove the power plug only after all the displays have disappeared.



- Always press [▲, OPEN/CLOSE] to insert or remove a disc.
- Do not push or pull out the tray by hand as this will cause an accident.



- Place the disc correctly label-up as shown in the diagram.
- Insert one disc into the tray.

NOTE on MP3 or WMA

- Files are treated as tracks and folders are treated as albums.
- This unit can access up to 999 tracks, 255 albums and 20 sessions.
- Disc must conform to ISO9660 level 1 or 2 (except for extended formats).
- To play in a certain order, prefix the folder and file names with 3-digits numbers in the order you want to play them.

MP3

When “NOT MP3/ERROR1” appears on the display, an unsupported MP3 format is being played. The unit will skip that track and play the next one.

WMA

- Noise may occur when playing WMA files.
- This unit cannot play WMA files that are copy protected.

Limitations on MP3 or WMA play

- If you have recorded MP3 or WMA on the same disc as CD-DA, only the format recorded in the first session can be played.
- Some MP3 or WMA may not be played due to the condition of the disc or recording.
- Due to differences and variations of WMA tags, some files may not play or display the tags’ information properly.
- Recordings will not necessarily be played in the order you recorded them.

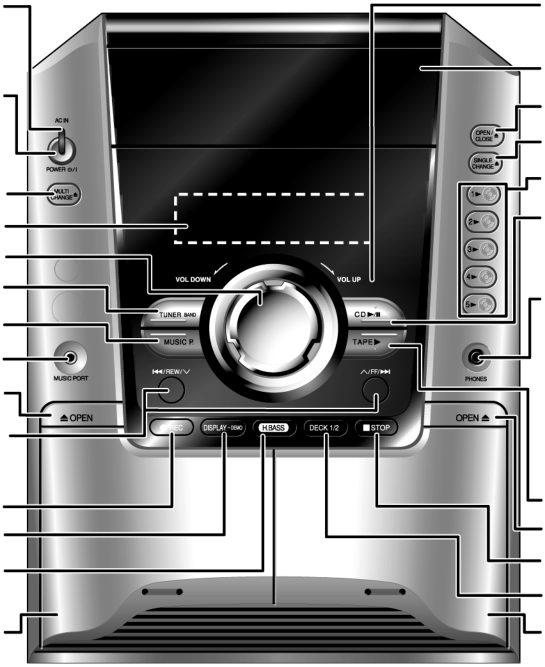
MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.

Windows Media, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.

Designed for
Windows Media™

Main unit


AC IN
POWER ⏻/I
MULTI CHANGE
VOL DOWN
VOL UP
TUNER BAND
MUSIC P.
CD ►/II
TAPE ►
MUSIC PORT
⏮/REW/∨
∧/FF/⏭
OPEN ⏏
REC
DISPLAY -DEMO
H.BASS
DECK 1/2
■STOP
OPEN/CLOSE
SINGLE CHANGE
PHONES

AC supply indicator [AC IN]
This indicator lights when the unit is connected to the AC power supply.

❶ **Standby/on switch [⏻/I, POWER]**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

Multiple discs change

Display panel

❷ **Volume control**

❸ **Tuner/Band selection**

❹ **Music port selection**

Music port jack

Deck 1 open

Disc skip/search, tape fast-forward/rewind, tune/preset channel selection, time adjustment

Record

Display, demonstration

❺ **H.BASS selection**

Deck 1 cassette holder

Remote control signal sensor

Disc trays

Disc tray open/close

Single disc change

Disc direct play

❻ **Disc play/pause**

Headphone jack (PHONES)
Avoid listening for prolonged periods of time to prevent hearing damage.
Plug type: 3.5 mm ($^1/_8$″) stereo (not included)

❼ **Tape play**

Deck 2 open

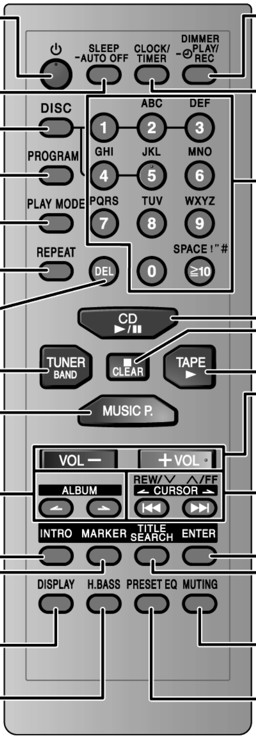
Stop

Deck selection

Deck 2 cassette holder

Remote control

Buttons such as ❶ function the same as the controls on the main unit.


⏻
SLEEP -AUTO OFF
CLOCK/ TIMER
DIMMER -⊙PLAY/ REC
DISC
PROGRAM
PLAY MODE
REPEAT
DEL
ABC
DEF
GHI
JKL
MNO
PQRS
TUV
WXYZ
SPACE !"#
1
2
3
4
5
6
7
8
9
0
≧10
CD ►/II
TUNER BAND
■ CLEAR
TAPE ►
MUSIC P.
VOL –
+ VOL
ALBUM
REW/∨ ∧/FF
CURSOR
INTRO
MARKER
TITLE SEARCH
ENTER
DISPLAY
H.BASS
PRESET EQ
MUTING

❶

Sleep timer Auto off

Disc

Program

Play mode

Repeat

Delete

❸

❹

Album selection

Intro selection

Marker memory/recall

Display

❺

Dimmer, Play timer/record timer

Clock/timer

Numeric, characters

❻

Stop/program clear

❼

❷

Disc skip/search, tape fast-forward/rewind, tune/preset channel selection, time adjustment, cursor

Enter

Title search

Muting

Preset EQ

SLEEP -AUTO OFF

This auto off function allows you to turn off the unit in **disc or tape** mode only after left unused for 10 minutes.

- Press and hold [–AUTO OFF] to activate the function.
- Press and hold [–AUTO OFF] again to cancel.
- The setting is maintained even if the unit is turned off.

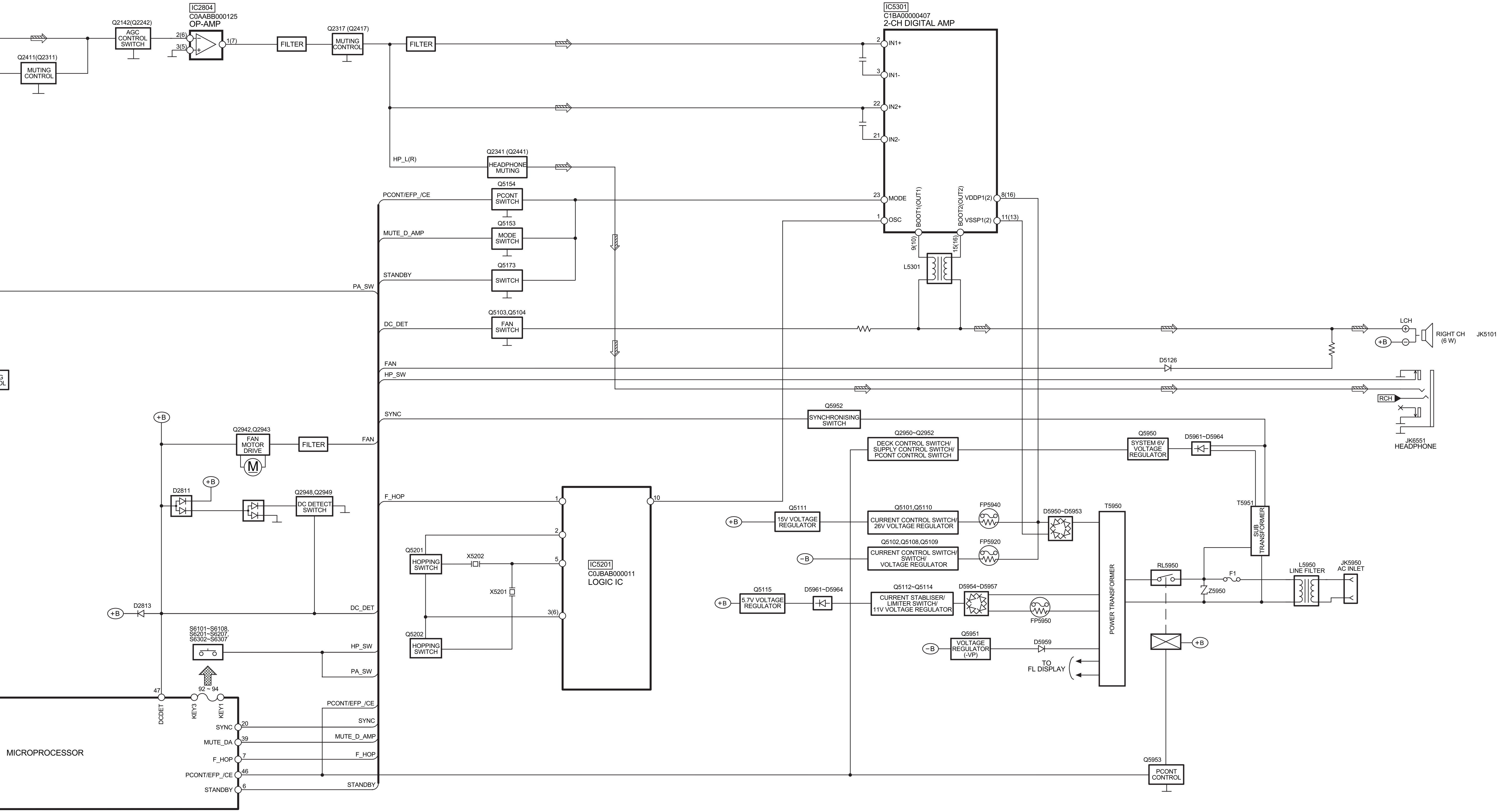
DIMMER -⊙PLAY/ REC

To dim the display panel.

MUTING

To mute the sound.

- Press the button to activate.
- Press again to cancel.

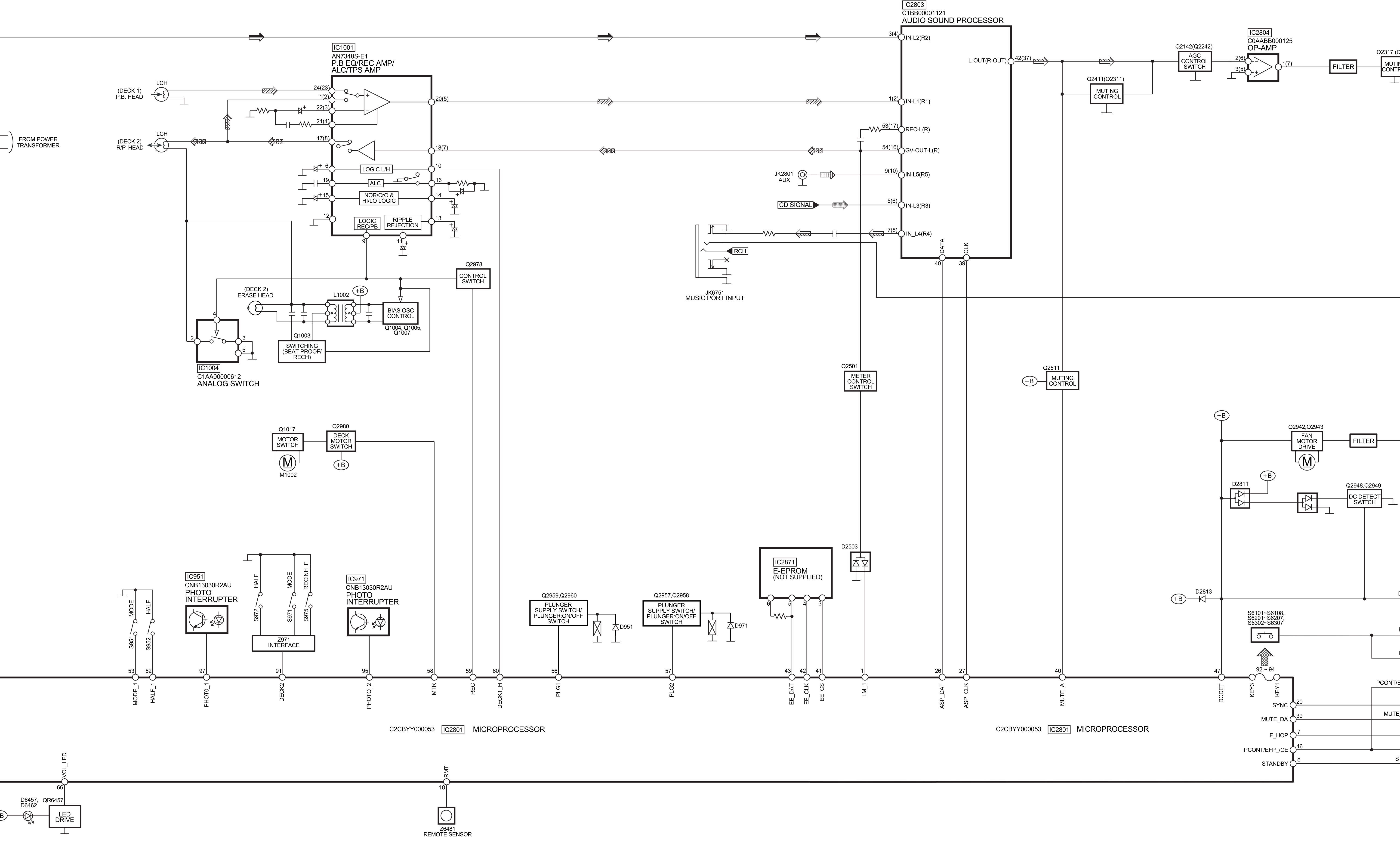

Q2411(Q2311)
MUTING CONTROL
Q2142(Q2242)
AGC CONTROL SWITCH
IC2804
C0AABB000125
OP-AMP
2(6)
3(5)
1(7)
FILTER
Q2317 (Q2417)
MUTING CONTROL
FILTER
IC5301
C1BA00000407
2-CH DIGITAL AMP
2 IN1+
3 IN1-
22 IN2+
21 IN2-
23 MODE
1 OSC
BOOT1(OUT1)
BOOT2(OUT2)
VDDP1(2) 8(16)
VSSP1(2) 11(13)
9(10)
15(16)
L5301
HP_L(R)
Q2341 (Q2441)
HEADPHONE MUTING
PCONT/EFP_/CE
Q5154
PCONT SWITCH
MUTE_D_AMP
Q5153
MODE SWITCH
STANDBY
Q5173
SWITCH
PA_SW
DC_DET
Q5103,Q5104
FAN SWITCH
FAN
HP_SW
SYNC
LCH
+B
RIGHT CH (6 W)
JK5101
D5126
RCH
JK6551
HEADPHONE
Q5952
SYNCHRONISING SWITCH
Q2950~Q2952
DECK CONTROL SWITCH/ SUPPLY CONTROL SWITCH/ PCONT CONTROL SWITCH
Q5950
SYSTEM 6V VOLTAGE REGULATOR
D5961~D5964
+B
Q2942,Q2943
FAN MOTOR DRIVE
M
FILTER
FAN
D2811
+B
Q2948,Q2949
DC DETECT SWITCH
F_HOP
1
10
2
5
3(6)
IC5201
C0JBAB000011
LOGIC IC
Q5201
HOPPING SWITCH
X5202
X5201
Q5202
HOPPING SWITCH
+B
D2813
DC_DET
S6101~S6108, S6201~S6207, S6302~S6307
HP_SW
PA_SW
92 ~ 94
47
DCDET
KEY3
KEY1
PCONT/EFP_/CE
SYNC
MUTE_D_AMP
F_HOP
STANDBY
20 SYNC
39 MUTE_DA
7 F_HOP
46 PCONT/EFP_/CE
6 STANDBY
MICROPROCESSOR
Q5111
+B
15V VOLTAGE REGULATOR
Q5101,Q5110
CURRENT CONTROL SWITCH/ 26V VOLTAGE REGULATOR
FP5940
D5950~D5953
T5950
T5951
SUB TRANSFORMER
−B
Q5102,Q5108,Q5109
CURRENT CONTROL SWITCH/ SWITCH/ VOLTAGE REGULATOR
FP5920
POWER TRANSFORMER
RL5950
F1
Z5950
L5950
LINE FILTER
JK5950
AC INLET
Q5115
+B
5.7V VOLTAGE REGULATOR
D5961~D5964
Q5112~Q5114
CURRENT STABLISER/ LIMITER SWITCH/ 11V VOLTAGE REGULATOR
D5954~D5957
FP5950
Q5951
−B
VOLTAGE REGULATOR (-VP)
D5959
TO FL DISPLAY
+B
Q5953
PCONT CONTROL

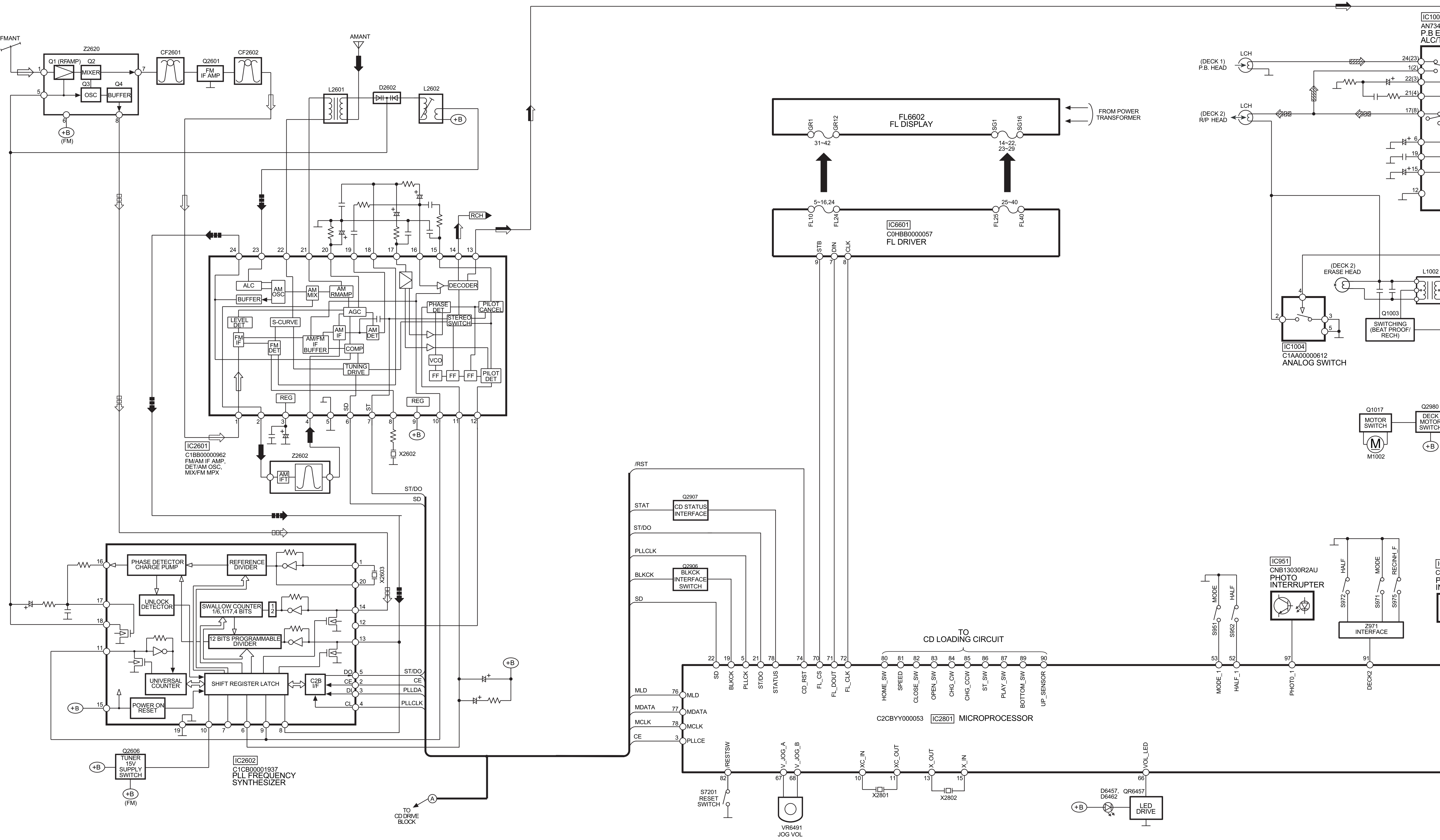
SIGNAL LINES

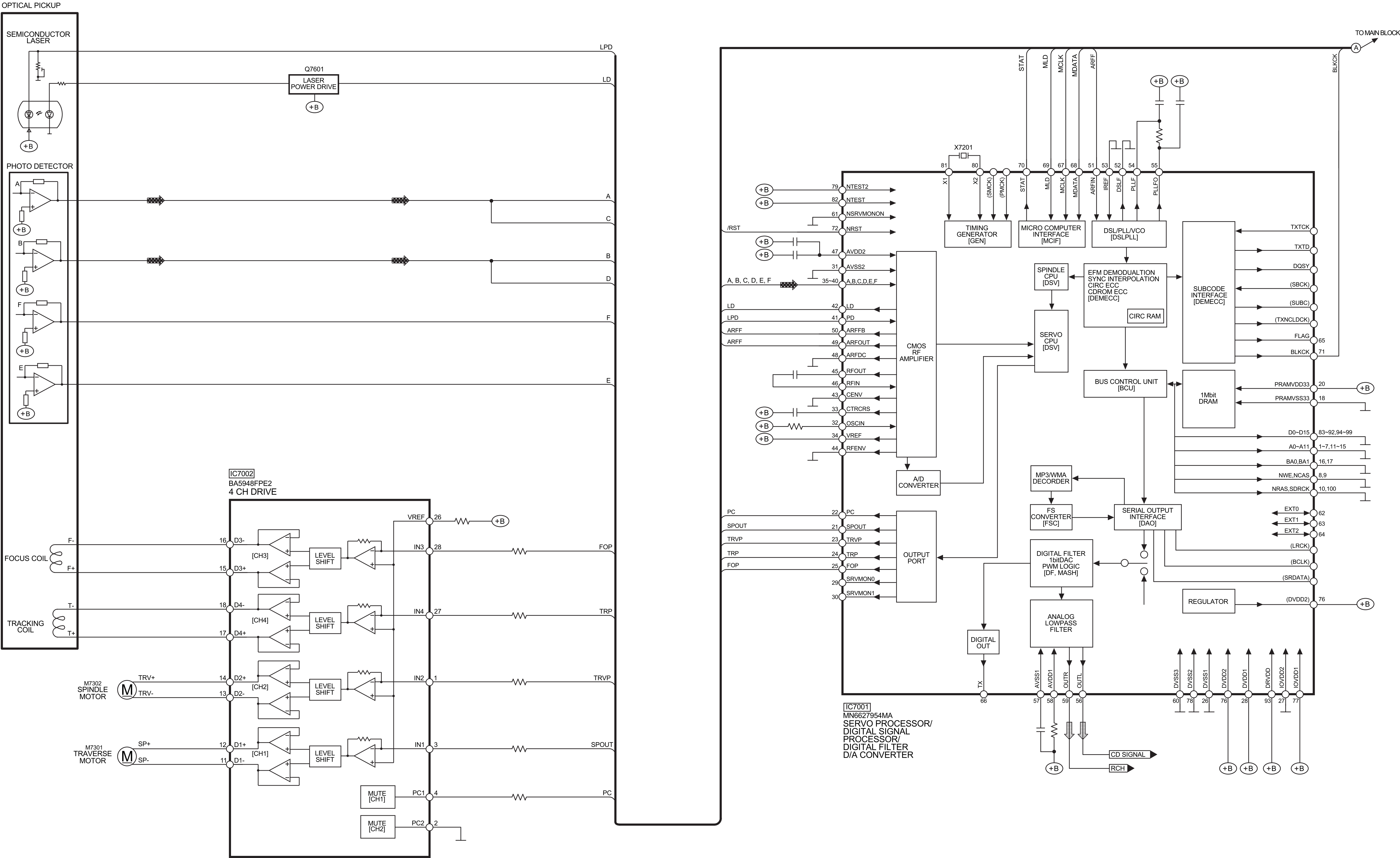
: MAIN SIGNAL LINE
: FM OSC SIGNAL LINE
: FM SIGNAL LINE
: CD SIGNAL LINE
: AM OSC SIGNAL LINE
: AUX SIGNAL LINE
: AM SIGNAL LINE
: FM/AM SIGNAL LINE
: CD-DA (AUDIO/VIDEO) SIGNAL LINE
: PLAYBACK SIGNAL LINE
: RECORD SIGNAL LINE

( ) Indicates the Pin No. of Right Channel.

NOTE : Signal Lines are applicable to the Left Channel only.


IC2803
C1BB00001121
AUDIO SOUND PROCESSOR
IC1001
AN7348S-E1
P.B EQ/REC AMP/
ALC/TPS AMP
(DECK 1)
P.B. HEAD
LCH
FROM POWER
TRANSFORMER
(DECK 2)
R/P HEAD
LOGIC L/H
ALC
NOR/CrO &
HI/LO LOGIC
LOGIC
REC/PB
RIPPLE
REJECTION
IC2804
C0AABB000125
OP-AMP
Q2142(Q2242)
AGC
CONTROL
SWITCH
Q2411(Q2311)
MUTING
CONTROL
FILTER
Q2317
IN-L2(R2)
L-OUT(R-OUT)
IN-L1(R1)
REC-L(R)
GV-OUT-L(R)
IN-L5(R5)
IN-L3(R3)
IN_L4(R4)
DATA
CLK
JK2801
AUX
CD SIGNAL
RCH
JK6751
MUSIC PORT INPUT
Q2978
CONTROL
SWITCH
(DECK 2)
ERASE HEAD
L1002
+B
BIAS OSC
CONTROL
Q1004, Q1005,
Q1007
Q1003
SWITCHING
(BEAT PROOF/
RECH)
IC1004
C1AA00000612
ANALOG SWITCH
Q2501
METER
CONTROL
SWITCH
Q2511
MUTING
CONTROL
–B
Q1017
MOTOR
SWITCH
M1002
Q2980
DECK
MOTOR
SWITCH
Q2942,Q2943
FAN
MOTOR
DRIVE
D2811
Q2948,Q2949
DC DETECT
SWITCH
D2503
IC2871
E-EPROM
(NOT SUPPLIED)
D2813
S6101~S6108,
S6201~S6207,
S6302~S6307
IC951
CNB13030R2AU
PHOTO
INTERRUPTER
IC971
CNB13030R2AU
PHOTO
INTERRUPTER
MODE
HALF
S951
S952
S972
S971
S975
RECINH_F
Z971
INTERFACE
Q2959,Q2960
PLUNGER
SUPPLY SWITCH/
PLUNGER:ON/OFF
SWITCH
D951
Q2957,Q2958
D971
MODE_1
HALF_1
PHOTO_1
DECK2
PHOTO_2
MTR
REC
DECK1_H
PLG1
PLG2
EE_DAT
EE_CLK
EE_CS
LM_I
ASP_DAT
ASP_CLK
MUTE_A
DCDET
KEY3
KEY1
92 ~ 94
SYNC
MUTE_DA
F_HOP
PCONT/EFP_/CE
STANDBY
C2CBYY000053
IC2801
MICROPROCESSOR
VOL_LED
D6457,
D6462
QR6457
LED
DRIVE
RMT
Z6481
REMOTE SENSOR


FMANT
Z2620
Q1 (RFAMP)
Q2
MIXER
Q3
OSC
Q4
BUFFER
+B
(FM)
CF2601
Q2601
FM IF AMP
CF2602
AMANT
L2601
D2602
L2602
+B
RCH
IC2601
C1BB00000962
FM/AM IF AMP, DET/AM OSC, MIX/FM MPX
ALC
AM OSC
AM MIX
AM RMAMP
BUFFER
AGC
LEVEL DET
S-CURVE
FM IF
AM/FM IF BUFFER
AM IF
AM DET
FM DET
COMP
TUNING DRIVE
DECODER
PHASE DET
PILOT CANCEL
STEREO SWITCH
VCO
FF
FF
FF
PILOT DET
REG
REG
SD
ST
+B
X2602
Z2602
AM IFT
ST/DO
SD
IC2602
C1CB00001937
PLL FREQUENCY SYNTHESIZER
PHASE DETECTOR CHARGE PUMP
REFERENCE DIVIDER
UNLOCK DETECTOR
SWALLOW COUNTER 1/6,1/17,4 BITS
12 BITS PROGRAMMABLE DIVIDER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
C2B I/F
POWER ON RESET
X2603
DO
CE
DI
CL
ST/DO
CE
PLLDA
PLLCLK
+B
Q2606
TUNER 15V SUPPLY SWITCH
+B
(FM)
A
TO CD DRIVE BLOCK
FL6602
FL DISPLAY
GR1
GR12
31~42
SG1
SG16
14~22, 23~29
FROM POWER TRANSFORMER
5~16,24
25~40
FL10
FL24
FL25
FL40
IC6601
C0HBB0000057
FL DRIVER
STB
DIN
CLK
/RST
STAT
Q2907
CD STATUS INTERFACE
ST/DO
PLLCLK
BLKCK
Q2906
BLKCK INTERFACE SWITCH
SD
MLD
MDATA
MCLK
CE
TO CD LOADING CIRCUIT
SD
BLKCK
PLLCK
ST/DO
STATUS
CD_RST
FL_CS
FL_DOUT
FL_CLK
HOME_SW
SPEED
CLOSE_SW
OPEN_SW
CHG_CW
CHG_CCW
ST_SW
PLAY_SW
BOTTOM_SW
UP_SENSOR
MODE_1
HALF_1
PHOTO_1
DECK2
MLD
MDATA
MCLK
PLLCE
C2CBYY000053
IC2801
MICROPROCESSOR
/RESTSW
V_JOG_A
V_JOG_B
XC_IN
XC_OUT
X_OUT
X_IN
VOL_LED
S7201 RESET SWITCH
VR6491 JOG VOL
X2801
X2802
+B
D6457, D6462
QR6457
LED DRIVE
MODE
HALF
S951
S952
IC951
CNB13030R2AU
PHOTO INTERRUPTER
HALF
MODE
RECINH_F
S972
S971
S975
Z971 INTERFACE
IC100
AN734
P.B.E
ALC/
(DECK 1) P.B. HEAD
LCH
(DECK 2) R/P HEAD
LCH
(DECK 2) ERASE HEAD
L1002
Q1003
SWITCHING (BEAT PROOF/ RECH)
IC1004
C1AA00000612
ANALOG SWITCH
Q1017
MOTOR SWITCH
M1002
Q2980
DECK MOTOR SWITCH
+B

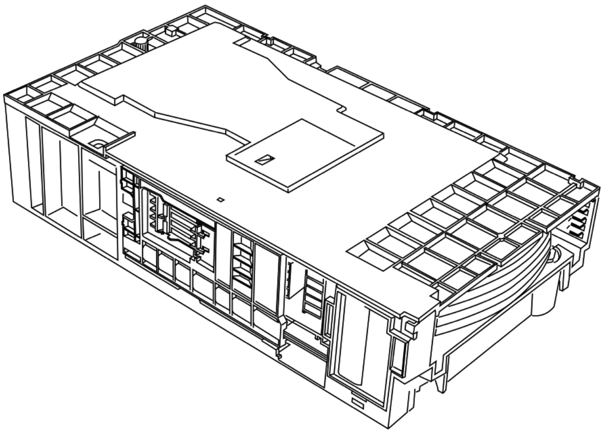

OPTICAL PICKUP
SEMICONDUCTOR LASER
+B
Q7601
LASER POWER DRIVE
+B
PHOTO DETECTOR
A
B
F
E
+B
LPD
LD
A
C
B
D
F
E
FOCUS COIL
F-
F+
TRACKING COIL
T-
T+
M7302
SPINDLE MOTOR
TRV+
TRV-
M7301
TRAVERSE MOTOR
SP+
SP-
IC7002
BA5948FPE2
4 CH DRIVE
VREF 26
+B
16 D3-
15 D3+
[CH3]
LEVEL SHIFT
IN3 28
FOP
18 D4-
17 D4+
[CH4]
IN4 27
TRP
14 D2+
13 D2-
[CH2]
IN2 1
TRVP
12 D1+
11 D1-
[CH1]
IN1 3
SPOUT
MUTE [CH1]
PC1 4
PC
MUTE [CH2]
PC2 2
TO MAIN BLOCK
A
BLKCK
STAT
MLD
MCLK
MDATA
ARFF
+B
+B
X7201
81 X1
80 X2
(SMCK)
(PMCK)
70 STAT
69 MLD
67 MCLK
68 MDATA
51 ARFIN
53 IREF
52 DSLF
54 PLLF
55 PLLFO
+B
79 NTEST2
+B
82 NTEST
61 NSRVMONON
/RST
72 NRST
+B
+B
47 AVDD2
31 AVSS2
A, B, C, D, E, F
35~40 A,B,C,D,E,F
LD
42 LD
LPD
41 PD
ARFF
50 ARFFB
ARFF
49 ARFOUT
48 ARFDC
45 RFOUT
46 RFIN
43 CENV
+B
33 CTRCRS
+B
32 OSCIN
+B
34 VREF
44 RFENV
CMOS RF AMPLIFIER
A/D CONVERTER
PC
22 PC
SPOUT
21 SPOUT
TRVP
23 TRVP
TRP
24 TRP
FOP
25 FOP
29 SRVMON0
30 SRVMON1
OUTPUT PORT
TIMING GENERATOR [GEN]
MICRO COMPUTER INTERFACE [MCIF]
DSL/PLL/VCO [DSLPLL]
SPINDLE CPU [DSV]
SERVO CPU [DSV]
EFM DEMODUALTION
SYNC INTERPOLATION
CIRC ECC
CDROM ECC
[DEMECC]
CIRC RAM
SUBCODE INTERFACE [DEMECC]
BUS CONTROL UNIT [BCU]
1Mbit DRAM
MP3/WMA DECORDER
FS CONVERTER [FSC]
SERIAL OUTPUT INTERFACE [DAO]
DIGITAL FILTER
1bitDAC
PWM LOGIC
[DF, MASH]
ANALOG LOWPASS FILTER
DIGITAL OUT
REGULATOR
TXTCK
TXTD
DQSY
(SBCK)
(SUBC)
(TXNCLDCK)
FLAG 65
BLKCK 71
PRAMVDD33 20
+B
PRAMVSS33 18
D0~D15 83~92,94~99
A0~A11 1~7,11~15
BA0,BA1 16,17
NWE,NCAS 8,9
NRAS,SDRCK 10,100
EXT0 62
EXT1 63
EXT2 64
(LRCK)
(BCLK)
(SRDATA)
(DVDD2) 76
+B
TX 66
AVSS1 57
AVDD1 58
OUTR 59
OUTL 56
DVSS3 60
DVSS2 78
DVSS1 26
DVDD2 76
DVDD1 28
DRVDD 93
IOVDD2 27
IOVDD1 77
+B
CD SIGNAL
RCH
+B
+B
+B
+B
IC7001
MN6627954MA
SERVO PROCESSOR/
DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER
D/A CONVERTER

ORDER NO. MD0509368C0
A6

Service Manual

Mechanism Unit

CRS1



⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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Panasonic

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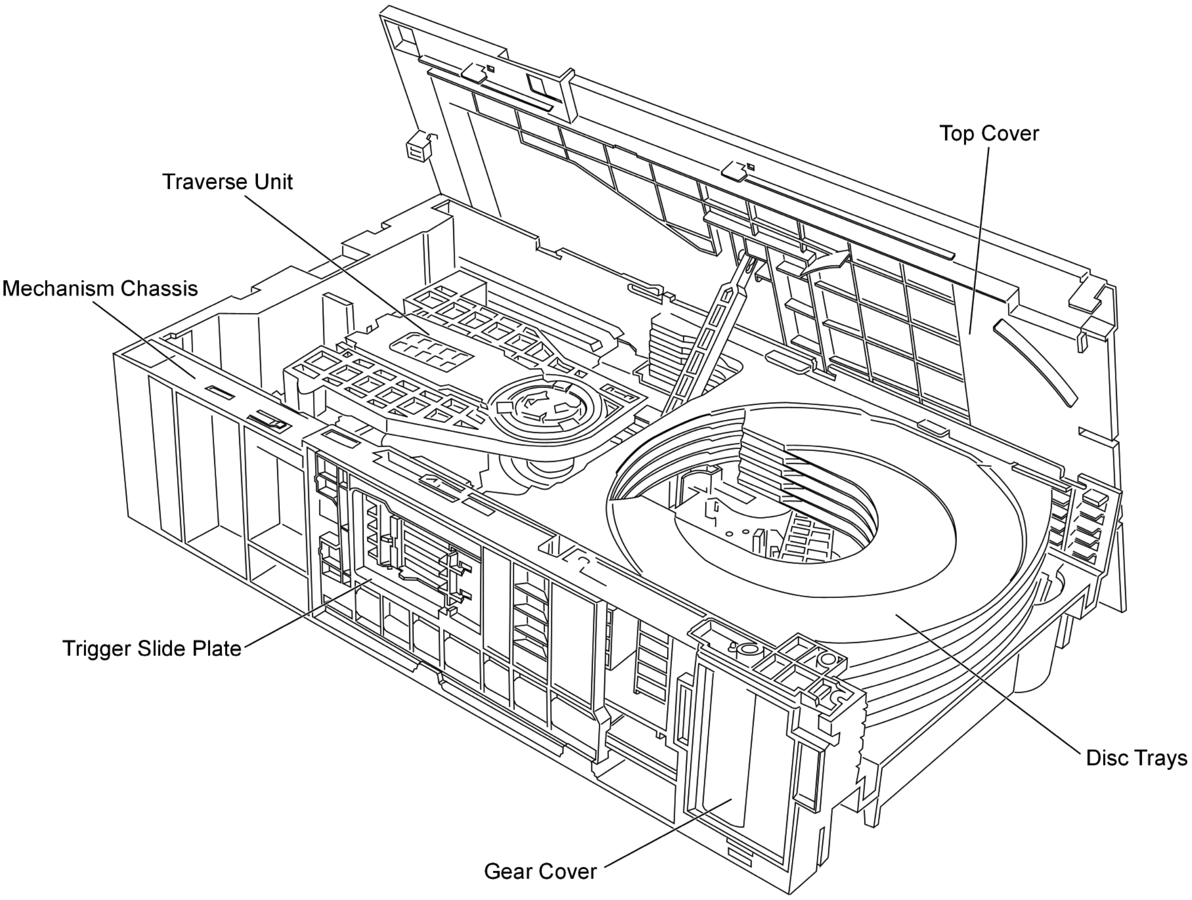
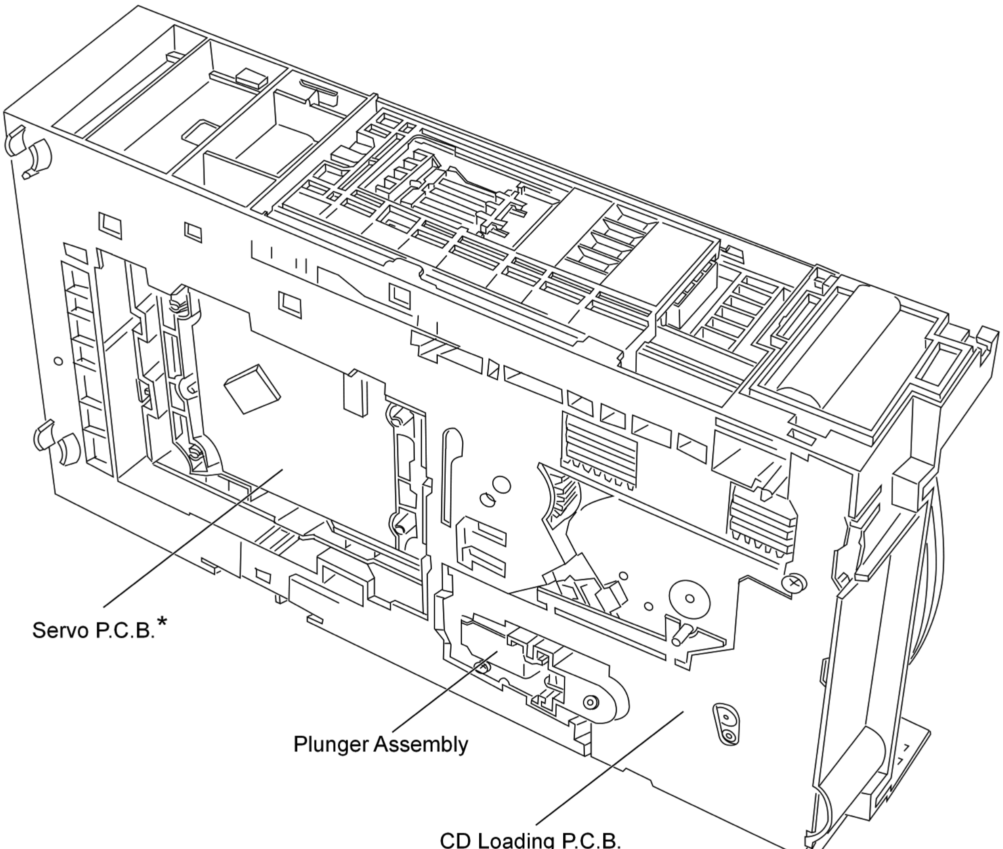
13.2. Electrical Parts List ---------- 102

1 Mechanism Overview

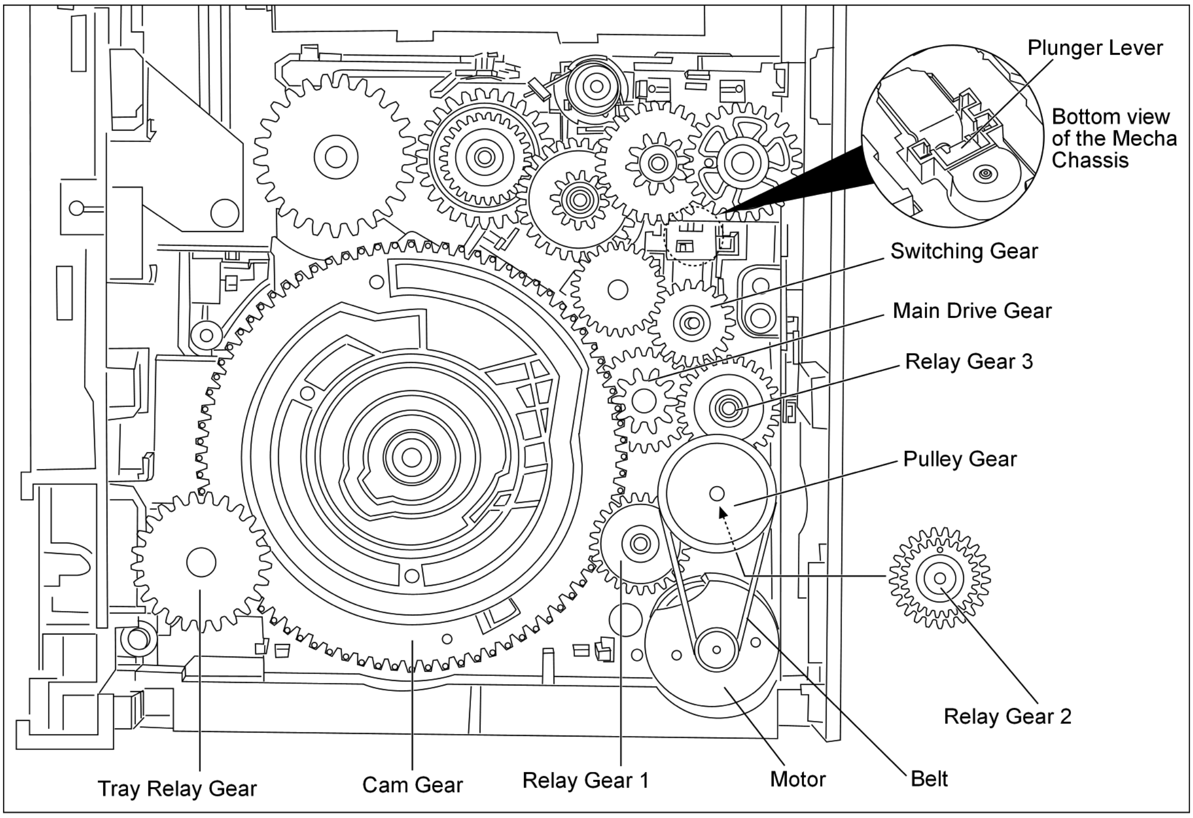

Top Cover
Traverse Unit
Mechanism Chassis
Trigger Slide Plate
Disc Trays
Gear Cover

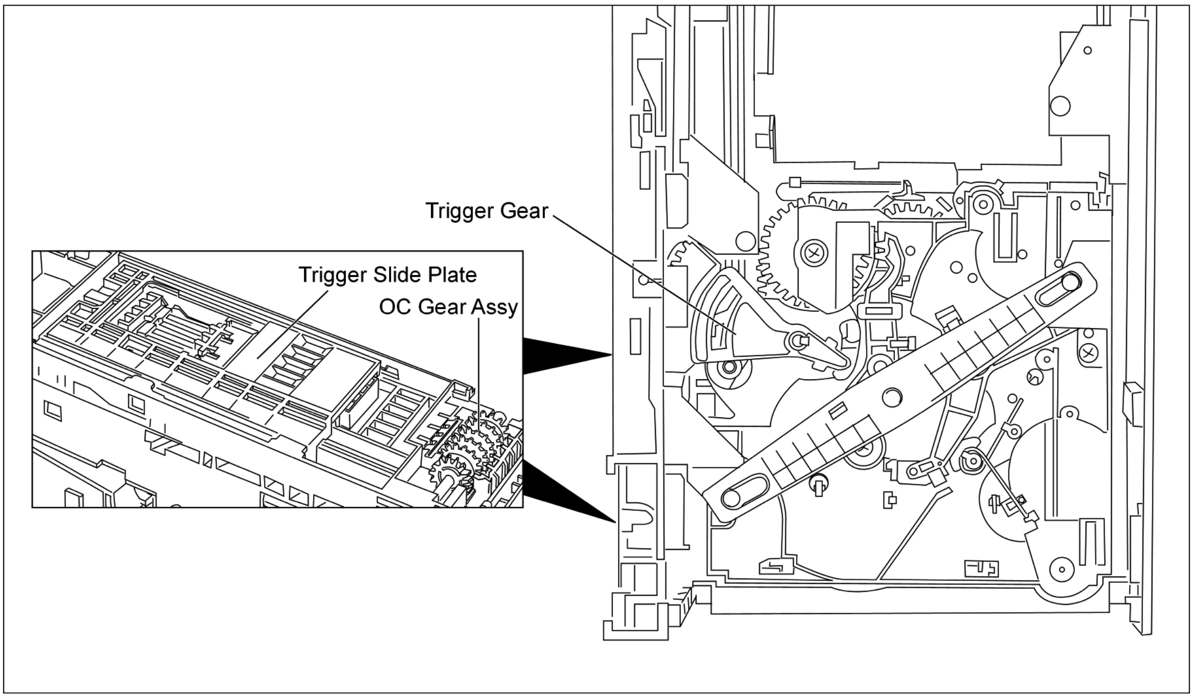

Servo P.C.B.*
Plunger Assembly
CD Loading P.C.B.

* Illustration for CD Servo P.C.B. (Applied models: SA-AK240/340/640 series)

2 Mechanism Drive Unit

2.1. Tray Open/Close and Multi-Discs Change operations


Plunger Lever
Bottom view of the Mecha Chassis
Switching Gear
Main Drive Gear
Relay Gear 3
Pulley Gear
Relay Gear 2
Belt
Motor
Relay Gear 1
Cam Gear
Tray Relay Gear


Trigger Gear
Trigger Slide Plate
OC Gear Assy

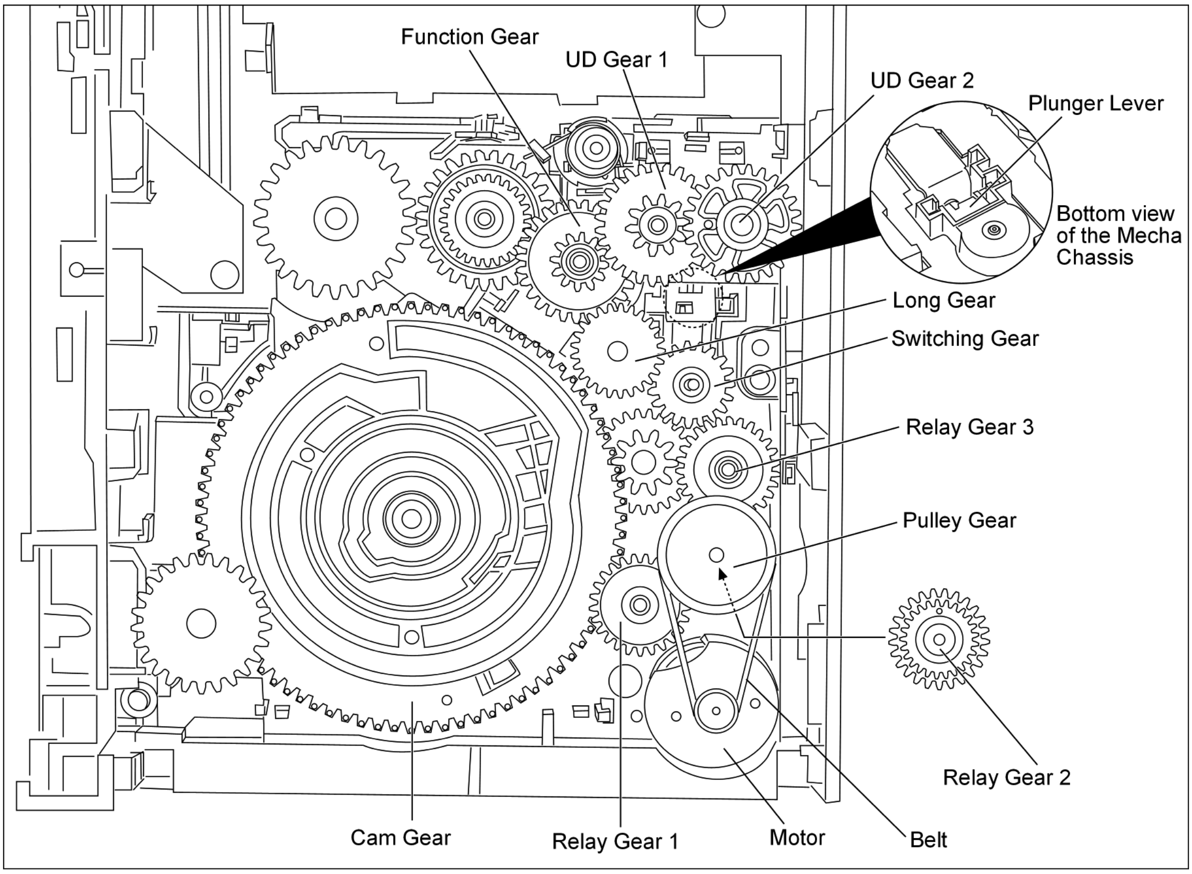
2.1.1. Description of tray open/close and multi-discs change operations

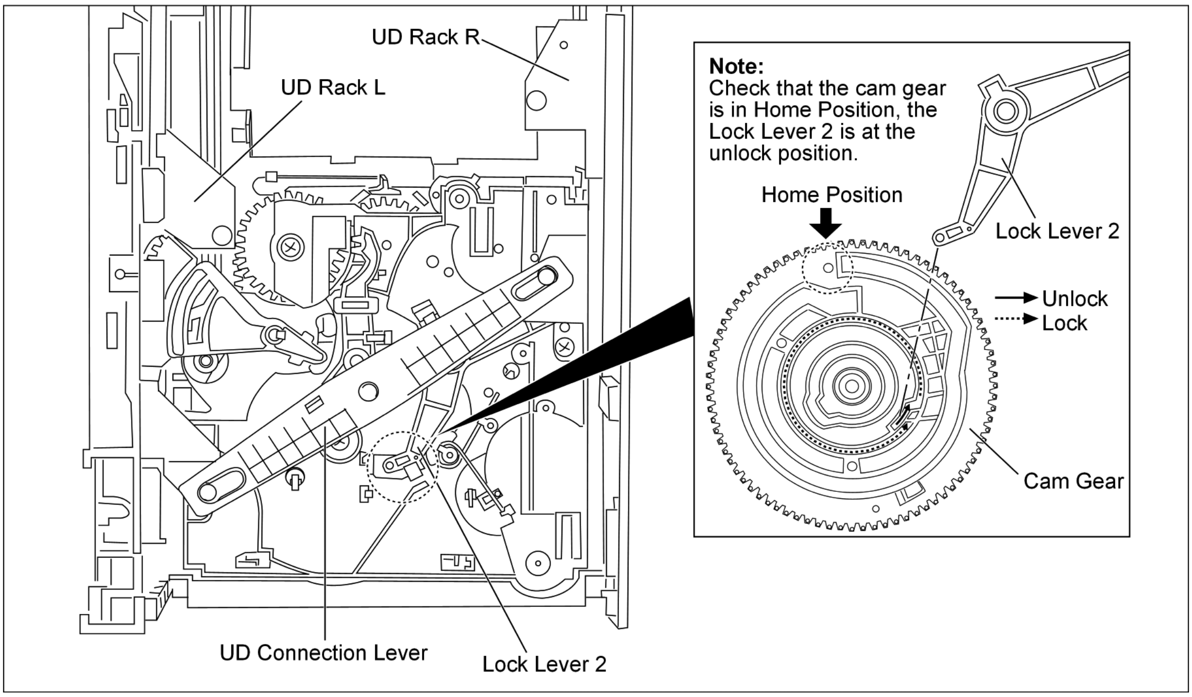
1. The motor turns in the clockwise direction and the rotation is transmitted via the belt, the pulley gear also turns clockwise.
2. The relay gear 1 turns counterclockwise.
3. The relay gear 2 turns clockwise.
4. The relay gear 3 turns counterclockwise.
5. The switching gear at down position turns clockwise (up/down position functioned by the plunger lever).
6. The main drive gear turns counterclockwise.

7. The cam gear turns clockwise, which is engaged with the trigger gear and slide plate, are driven, causes the tray lock lever unlock.
8. The tray relay gear turns counterclockwise, which is engaged with the OC assy, is driven.
9. The movement of the OC assy releases the disc trays.

(The operation of the disc trays closed is the opposite of that for opening of disc trays.)

2.2. Disc Selection operation


Function Gear
UD Gear 1
UD Gear 2
Plunger Lever
Bottom view of the Mecha Chassis
Long Gear
Switching Gear
Relay Gear 3
Pulley Gear
Relay Gear 2
Cam Gear
Relay Gear 1
Motor
Belt


UD Rack R
UD Rack L
Home Position
Lock Lever 2
Unlock
Lock
Cam Gear
UD Connection Lever
Lock Lever 2

Note:
Check that the cam gear is in Home Position, the Lock Lever 2 is at the unlock position.

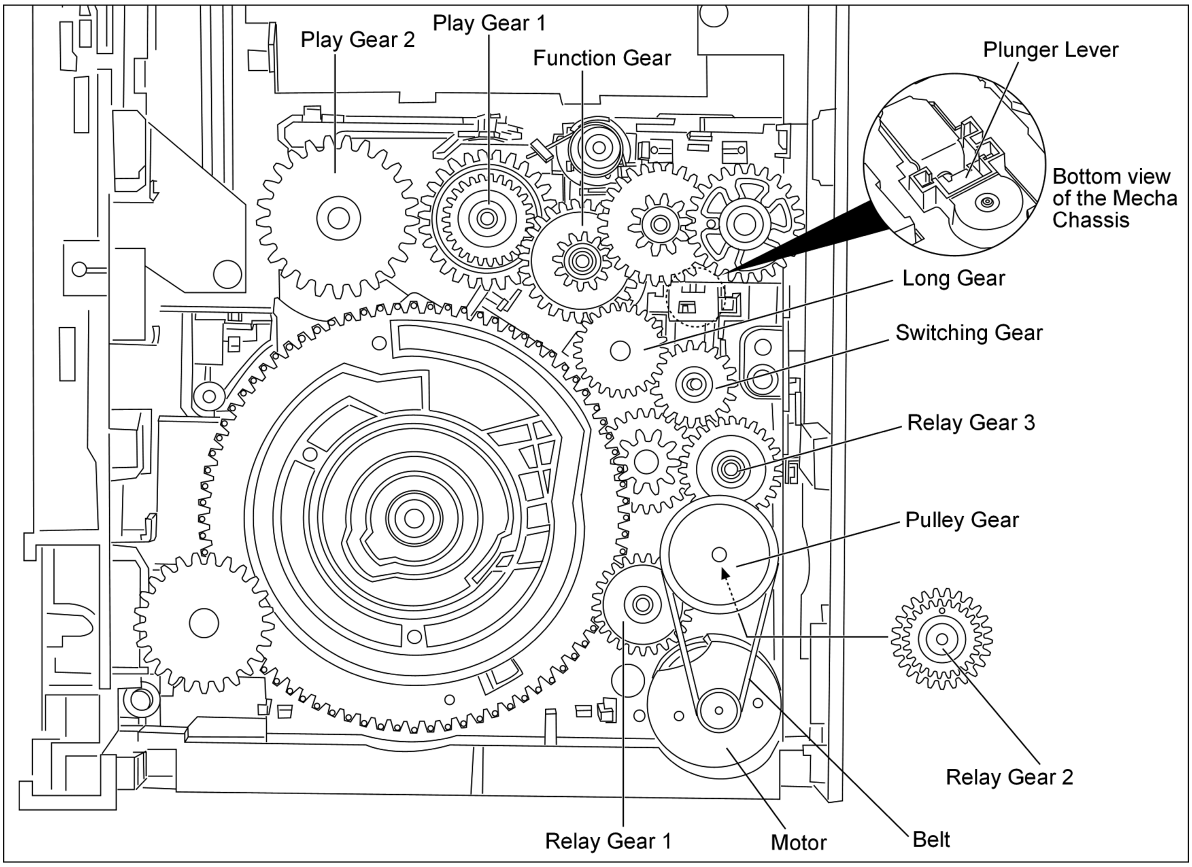
2.2.1. Description of disc selection operation

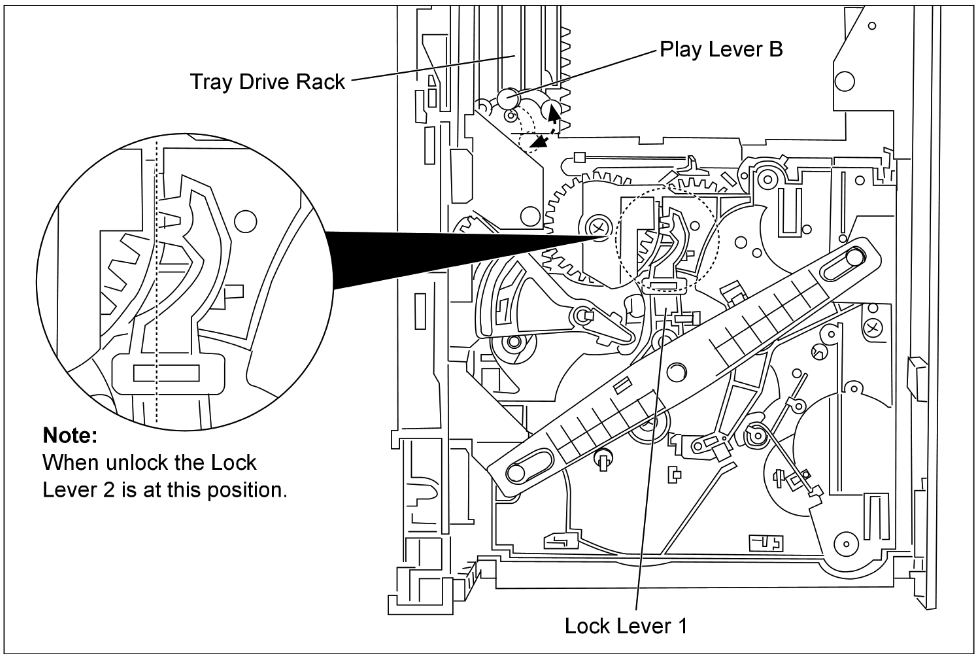
Note: Check that the cam gear is in “HOME” position.

1. The motor turns in the clockwise direction and the rotation is transmitted via the belt, the pulley gear also turns clockwise.
2. The relay gear 1 turns counterclockwise.
3. The relay gear 2 turns clockwise.
4. The relay gear 3 turns counterclockwise..
5. The switching gear move up turns clockwise (up/down position functioned by the plunger lever).
6. The long gear turns counterclockwise.
7. The function gear moved up turns clockwise.
8. The UD gear 1 turns counterclockwise.
9. The UD gear 2 turns clockwise engaged with the UD rack R drives the UD connection lever turns clockwise, UD rack L, is driven to move the traverse deck assembly up.

(The operation of the traverse deck assembly down is the opposite of that for the traverse deck assembly up.)

2.3. Play/Stop operation


Play Gear 1
Play Gear 2
Function Gear
Plunger Lever
Bottom view of the Mecha Chassis
Long Gear
Switching Gear
Relay Gear 3
Pulley Gear
Relay Gear 2
Relay Gear 1
Motor
Belt


Play Lever B
Tray Drive Rack
Note:
When unlock the Lock Lever 2 is at this position.
Lock Lever 1

2.3.1. Description of play/stop operation

Note: Check that the Lock Lever 1 is unlock.

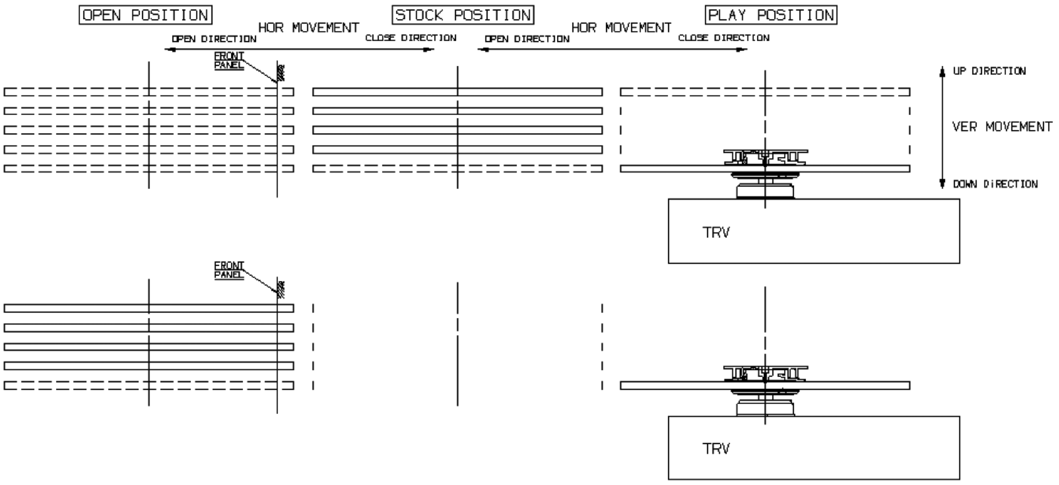
1. The motor turns in the clockwise direction and the rotation is transmitted via the belt, the pulley gear also turns clockwise.
2. The relay gear 1 turns counterclockwise.
3. The relay gear 2 turns clockwise.
4. The relay gear 3 turns counterclockwise.
5. The switching gear move up turns clockwise (up/down position functioned by the plunger lever).
6. The long gear turns counterclockwise.

7. The function gear move down turns clockwise.
8. The play gear 1 turns counterclockwise.
9. The play gear 2 turns clockwise engaged with the tray drive rack and tray catch lever to push in the disc trays.
10. Play lever B engaged with the traverse deck assembly’s play lever A, causes slide plate move towards to the play position.

3 Mechanism Operation Description

3.1. General Feature

- This is a five disc changer mechanism for CD/DVD. The outline figure is shown below.



- The mechanism has **"CHANGE WHILE PLAY"** function. It open other trays for disc exchanging while one tray is at PLAY position performing recording or reproducing.
- The mechanism can quickly change all trays with **"CHANGE ALL"** function. All trays can be move to OPEN position with one operation.
- There is no sensor to indicate presence of disc on any tray.

3.2. Hardware composition

- Below is the hardware components of the mechanism

Name	Function
Open Switch (OPEN-SW)	The switch is used to detect normal tray opening
	The switch is used for detect tray being manually push/trigger when full open
Home Switch (HOME-SW)	Is used to detect cam gear home position
Close Sensor (CLOSE-SENSOR)	Used for normal single tray closing
	Used to detect cam gear rotate to Play Driving position
Play Switch (PLAY-SW)	Detect TRV clamping complete position
Stocking Switch (STOCK-SW)	Detect tray completely transfer for play position to stocking positi
UD Sensor (UD-SENSOR)	Detect TRV vertical movement position
Top Switch (TOP-SW)	Detect a default position of TRV vertical movement position
Driver IC	To drive Motor
Motor	Main driving source for changer
Plunger	Switching the driving source from motor to: 1. Tray open/close 2. Drive tray to play/stock position and TRV vertical movemen

3.3. Mechanism Operation

- This mechanism has the following state:
  1. Driving of a tray to open/close
  2. Up/down operation of a traverse performs a state changes of tray.

  By using the plunger to lift/release of a switching gear, and the cam gear to lift/release the function gear the motor can be link to several gear trains to perform various operations.
- The functions that can be perform in this mechanism are described as below:

Condition	Explanation
Open current playing tray	The state to change current playing disc. All tray will be open at once and current tray at PLAY position will be expose.
Open All	The state where all trays being driven to OPEN position. The disc can be taken in or out from tray to tray by close tray one by one from top to bottom.
Stock	The state where the trays are stored in STOCK position
Play	The state where one of the tray 5 trays is being driven to PLAY position and clamped by traverse unit

Condition	Explanation
Play & Open Tray-*	The state where one of the tray is in playing position performing recording or reproducing, other trays can be used (OPEN position) for disc exchanging without stopping the recording or reproducing process.
Change	The state when one of the opened tray being driven from OPEN position to STOCK position and other opened trays remain still at OPEN position.
Close All	The state where all open trays will being driven from OPEN position to STOCK position, one by one from top to bottom

Note: * represent tray number (from 1 ~ 5)

- Logics of motor control:

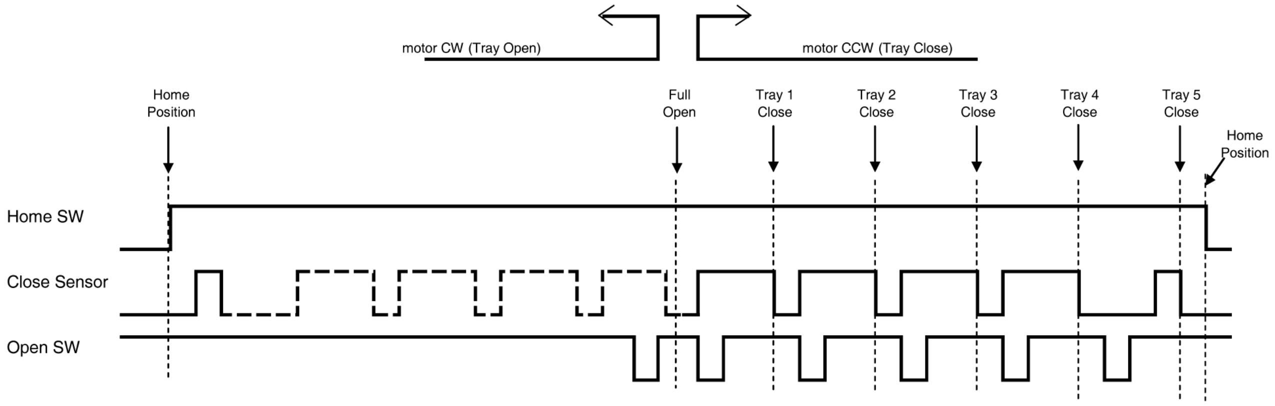
Action	CW	CCW	Plunger
Tray Opening	H	L	L
Tray Closing	L	H	L
Cam move from Home Position to Play Driving Position	H	L	L
Cam move from Play Driving Position to Home Position	L	H	L
Drive tray to PLAY position	H	L	H
Drive tray to STOCK position	L	H	H
UD base moving upward	H	L	H
UD base moving downward	L	H	H

Notes :
CW/CCW : Motor direction control (CW : clockwise, CCW : Anti-clockwise)
Plunger : Solenoid Control (H : ON = Activation)

- Cam gear in the mechanism use for opening/closing of trays and lifting a function gear to link to gear train that drive UD base moving up/down. When cam gear is being driven to play driving position, the function gear will be bring down to link the gear train that drive tray to and from STOCK position and PLAY position. Below are the relation between mechanism function and cam gear movement and position

Motor Direction	Plunger Unit	Cam gear movement/position	Function
CW	Release	Home SW → rotate CW	Trays Open
CCW	Release	Rotate CCW → Home SW	Trays Close
CW	Release	Home SW → close sensor 1st L-H signal	Cam gear move from Home Position to Play Driving Posi
CCW	Release	Close sensor 1st (H → L) signal → Home SW	Cam gear move from Play Driving Position to Home Position
CW	Up	Cam Stop at Home Position	UD base moving from bottom to top
CCW	Up	Cam Stop at Home Position	UD base moving from top to bottom
CW	Up	Cam Stop at Play Driving Position	Tray move from STOCK to PLAY position
CCW	Up	Cam Stop at Play Driving Position	Tray move from PLAY position to STOCK Position

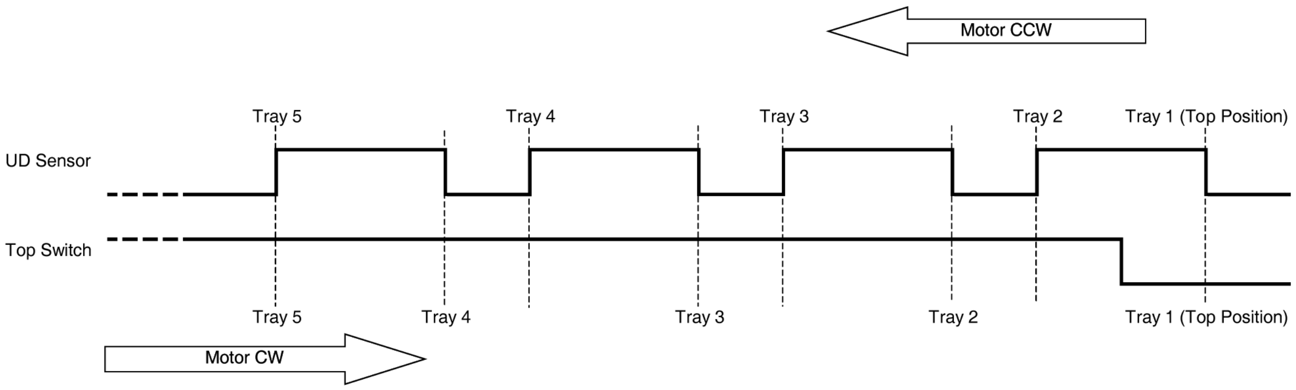
- Cam gear rotation direction, switch and state changes is show in figure below:



- The movement of UD base (vertical up/down) and driving of tray(s) between STOCK position and PLAY position is only enable when plunger ON (lift up the switching gear to link driving source to the both gear train). Only one gear train can be driven at one time, the selection of either gear train is depending on cam gear position. Below are figure showing the operation of motor driving direction and its function carry out.

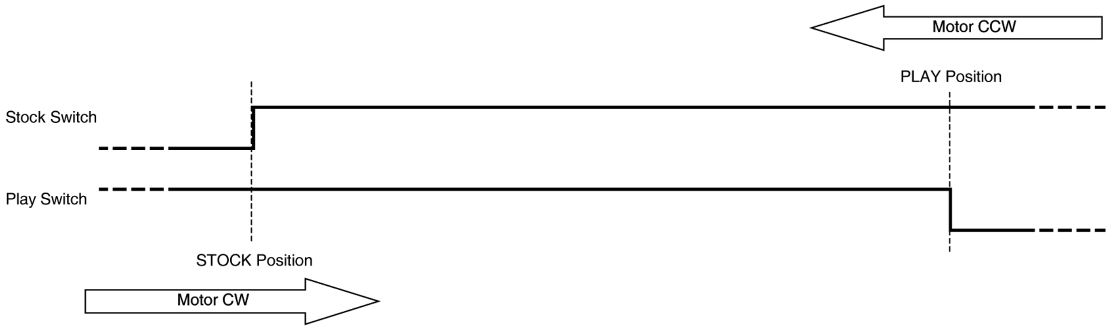
	Cam Gear	
Motor	**Home Position (UD Driving Position)**	**Play Driving Position**
CW	UD base move upwards direction 5→1	Stock → Play
CCW	UD base move downwards direction 1→5	Play → Stock

- For driving UD base up/down the cam gear must be at the home position (UD driving position) and plunger need to be activated, the switch and state change is as figure below:


Motor CCW
Tray 5
Tray 4
Tray 3
Tray 2
Tray 1 (Top Position)
UD Sensor
Top Switch
Tray 5
Tray 4
Tray 3
Tray 2
Tray 1 (Top Position)
Motor CW

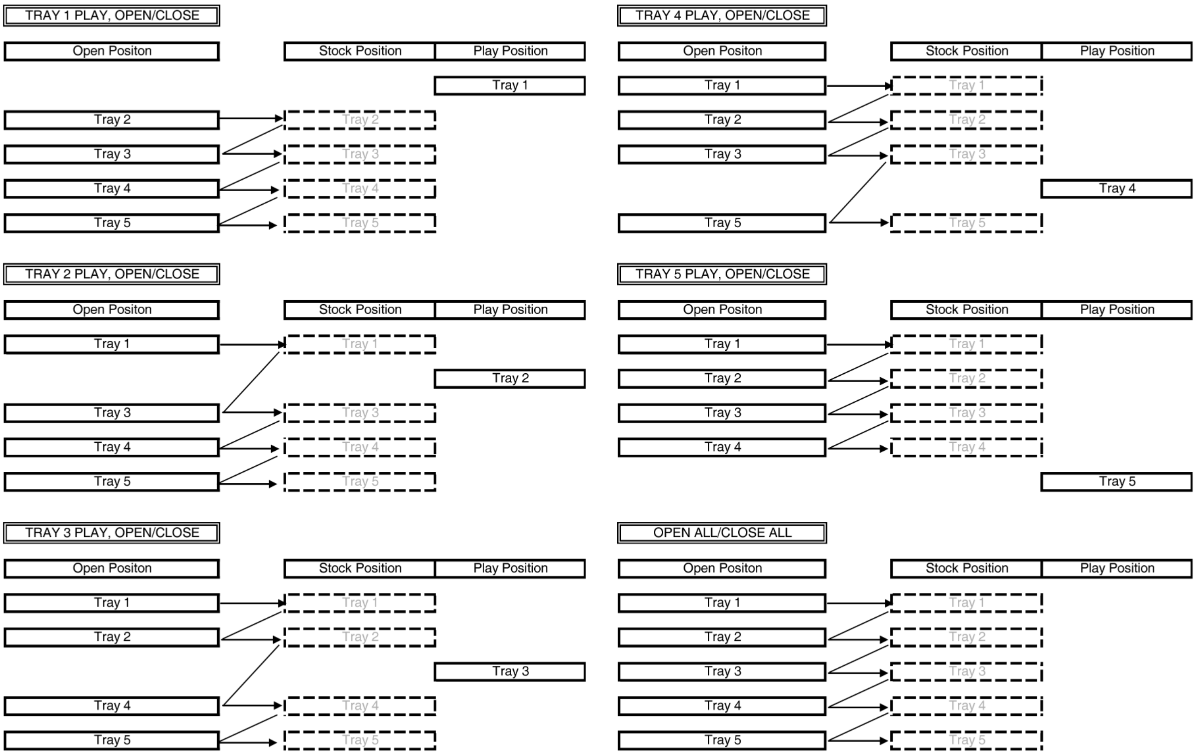
*Condition
i. Cam gear at HOME position
ii. Plunger activated (H)

- To drive the tray(s) between STOCK/PLAY position, cam gear must be at the play driving position and plunger need to be activated, the switch and state change is as figure below:


Motor CCW
PLAY Position
Stock Switch
Play Switch
STOCK Position
Motor CW

*Condition
iii. Cam gear at Play Driving position
iv. Plunger activated (H)

- The mechanism tray opening and closing is cycle process. It is able to open all trays in STOCK position while one of the tray is in PLAY position. The closing can be done one by one or close all at once depend on the user instruction. Below show the tray opening and closing flow.


TRAY 1 PLAY, OPEN/CLOSE
TRAY 2 PLAY, OPEN/CLOSE
TRAY 3 PLAY, OPEN/CLOSE
TRAY 4 PLAY, OPEN/CLOSE
TRAY 5 PLAY, OPEN/CLOSE
OPEN ALL/CLOSE ALL
Open Positon
Stock Position
Play Position
Tray 1
Tray 2
Tray 3
Tray 4
Tray 5

3.4. Switches Chattering Check

- Each input shall perform chattering check processing.

OPEN-SW	2ms Periodic sampling. It logic-decides by continuation same 5 times.
PLAY-SW	2ms Periodic sampling. It logic-decides by continuation same 5 times.
STOCK-SW	2ms Periodic sampling. It logic-decides by continuation same 5 times.
TOP-SW	2ms Periodic sampling. It logic-decides by continuation same 5 times.
HOME-SW	2ms Periodic sampling. It logic-decides by continuation same 5 times.
UD-SENSOR	2ms Periodic sampling. It logic-decides by continuation same 5 times.
CLOSE-SENSOR	2ms Periodic sampling. It logic-decides by continuation same 5 times.

3.5. Motor Movement Control

Condition	Motor	
	CW	CCW
Free	L	L
Rotate CW	H	L
Rotate CCW	L	H
Short Brake	H	H

3.6. Plunger Timing Chart

- Plunger is use for pulling the lever that a switching gear is sit on the lever. When current supply to the plunger to pulling (kick) switching gear, it will be lift up to engage to 1st gear train. When current supply to plunger is cut off (release), switching gear will be bring done by gravity force and mechanical coil spring on top of it. Plunger use for connect the driving source from motor to 2 different gear train in the mechanism, the functions of the gear trains are as below:
  1. Tray open/close
  2. Drive tray to play/stock position and TRV vertical movement

- The plunger movement is define as below:
  Kick = H, Release= L

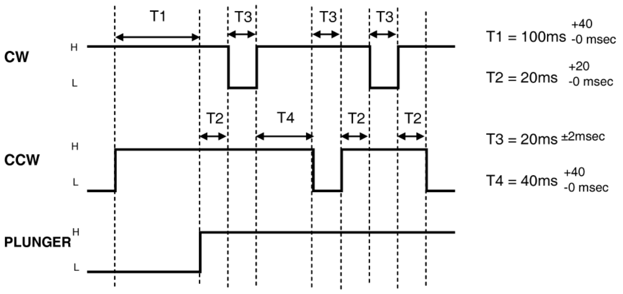
- Each time during plunger activation time (Kick/Release), the motor shall perform a short time CW and CCW rotation for release the gear side force and ensure complete gear to gear engagement.

- The basic concept of the motor rotation sequence (CW or CCW) is base on the initial and final motor rotating direction. The direction should be opposite to the initial and final motor driving direction in order to:
  1. To release the gear teeth side force
  2. To release mechanism belt tension
  3. To ensure switching gear disengage or engage into other gear´s teeth

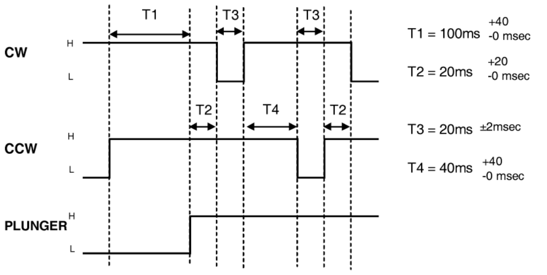
- Summary of the type of motor short rotation direction is as below:

Motor Direction	**Initial**	**Short Rotate Direction**			**Final**	**Switching Mode**
		1st	**2nd**	**3rd**		
Plunger Kick	CW	CCW	CW	CCW	CW	A
		CCW	CW	-	CCW	B
	CCW	CW	CCW	-	CW	C
		CW	CCW	CW	CCW	D
Plunger Release	CW	CCW	CW	CCW	CW	E
		CCW	CW	-	CCW	F
	CCW	CW	CCW	-	CW	G
		CW	CCW	CW	CCW	H

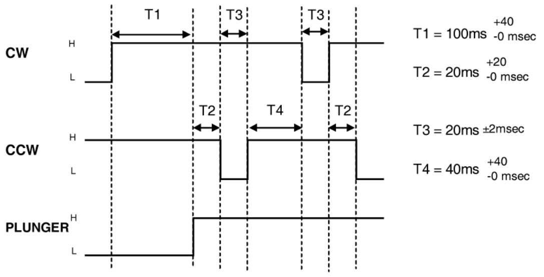
- Below are the timing charts of plunger activation time.


T1
T3
T3
T3
CW
H
L
T2
T4
T2
T2
CCW
H
L
PLUNGER
H
L
T1 = 100ms +40 -0 msec
T2 = 20ms +20 -0 msec
T3 = 20ms ±2msec
T4 = 40ms +40 -0 msec

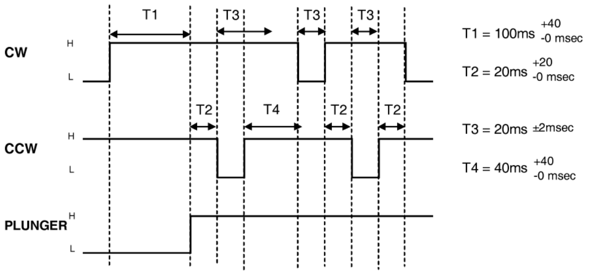
Switching Mode A


T1
T3
T3
CW
H
L
T2
T4
T2
CCW
H
L
PLUNGER
H
L
T1 = 100ms +40 -0 msec
T2 = 20ms +20 -0 msec
T3 = 20ms ±2msec
T4 = 40ms +40 -0 msec

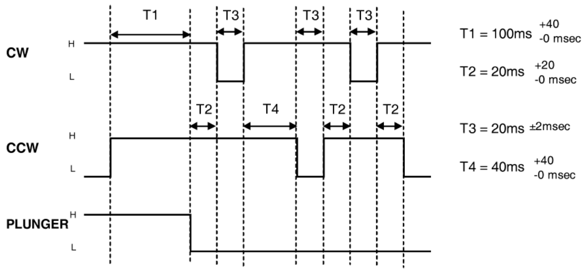
Switching Mode B


T1
T3
T3
CW
H
L
T2
T4
T2
CCW
H
L
PLUNGER
H
L
T1 = 100ms +40 -0 msec
T2 = 20ms +20 -0 msec
T3 = 20ms ±2msec
T4 = 40ms +40 -0 msec

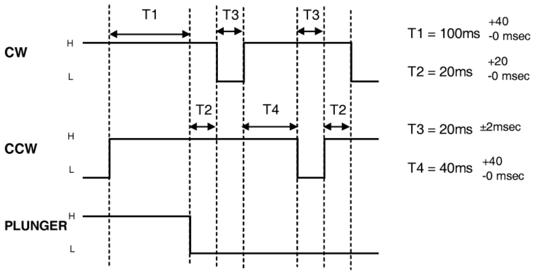
Switching Mode C


T1
T3
T3
T3
CW
H
L
T2
T4
T2
T2
CCW
H
L
PLUNGER
H
L
T1 = 100ms +40 -0 msec
T2 = 20ms +20 -0 msec
T3 = 20ms ±2msec
T4 = 40ms +40 -0 msec

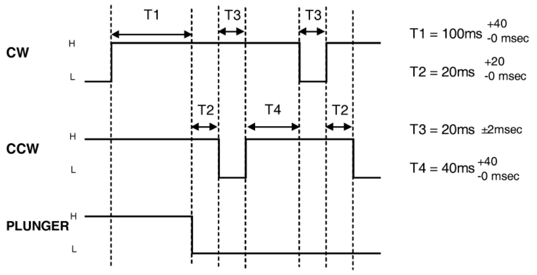
Switching Mode D


T1
T3
T3
T3
CW
H
L
T2
T4
T2
T2
CCW
H
L
PLUNGER
H
L
T1 = 100ms +40 -0 msec
T2 = 20ms +20 -0 msec
T3 = 20ms ±2msec
T4 = 40ms +40 -0 msec

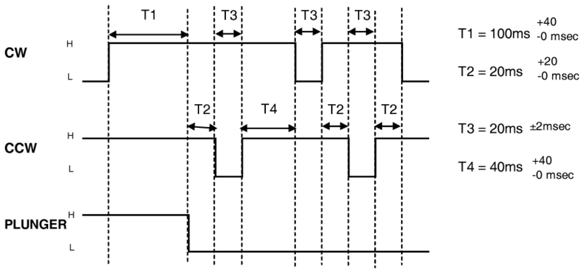
Switching Mode E


T1
T3
T3
CW
H
L
T2
T4
T2
CCW
H
L
PLUNGER
H
L
T1 = 100ms +40 -0 msec
T2 = 20ms +20 -0 msec
T3 = 20ms ±2msec
T4 = 40ms +40 -0 msec

Switching Mode F


T1
T3
T3
CW
H
L
T2
T4
T2
CCW
H
L
PLUNGER
H
L
T1 = 100ms +40 -0 msec
T2 = 20ms +20 -0 msec
T3 = 20ms ±2msec
T4 = 40ms +40 -0 msec

Switching Mode G


T1
T3
T3
T3
CW
H
L
T2
T4
T2
T2
CCW
H
L
PLUNGER
H
L
T1 = 100ms +40 -0 msec
T2 = 20ms +20 -0 msec
T3 = 20ms ±2msec
T4 = 40ms +40 -0 msec

Switching Mode H

· As the plunger only activate at 2 position of cam gear. The plunger mode summary as below:

Switching Position	Initial Motor Direction	Switching Mode	Initial Motor Direction	Function
Home Position	Cam gear rotate CCW to HOME Motor : **CCW**	C	UD base move from bottom to top Motor : **CW**	Tray selection from bottom to top
	Cam gear rotate CCW to HOME Motor : **CCW**	D	UD base move from top to bottom Motor : **CCW**	Tray selection from top to bottom
	UD base move from bottom to top Motor : **CW**	E	Cam gear rotate CW from HOME to Play Driving Position. Motor : **CW**	After tray selection, cam gear rotate to Play Driving Position
	UD base move from top to bottom Motor : **CCW**	G	Cam gear rotate CW from HOME to Play Driving Position. Motor : **CW**	After tray selection, cam gear rotate to Play Driving Position
Play Driving Position	Cam gear rotate CW from HOME to Play Driving Position. Motor : **CW**	A	Drive tray from STOCK position to PLAY position. Motor : **CW**	Load tray to Play
	Cam gear rotate CW from HOME to Play Driving Position. Motor : **CW**	B	Drive tray from PLAY position to STOCK position. Motor : **CCW**	Unload tray from Play to Stock
	Drive tray from STOCK position to PLAY position. Motor : **CW**	F	Cam gear rotate CCW from Play Driving Position to HOME. Motor : **CCW**	After load tray to Play, cam gear return to HOME
	Drive tray from PLAY position to STOCK position. Motor : **CCW**	H	Cam gear rotate CCW from Play Driving Position to HOME. Motor : **CCW**	After unload tray from Play, cam gear return to HOME
	Drive tray from PLAY position to STOCK position. Motor : **CCW**	G	Cam gear rotate CW from until trays full open. Motor : **CW**	Open trays while one tray Play

- Switching mode G is used during initialization to ensure that the switching gear is at the release (down) condition before the initialization process begins.

3.7. Initialization of Mechanism Unit.

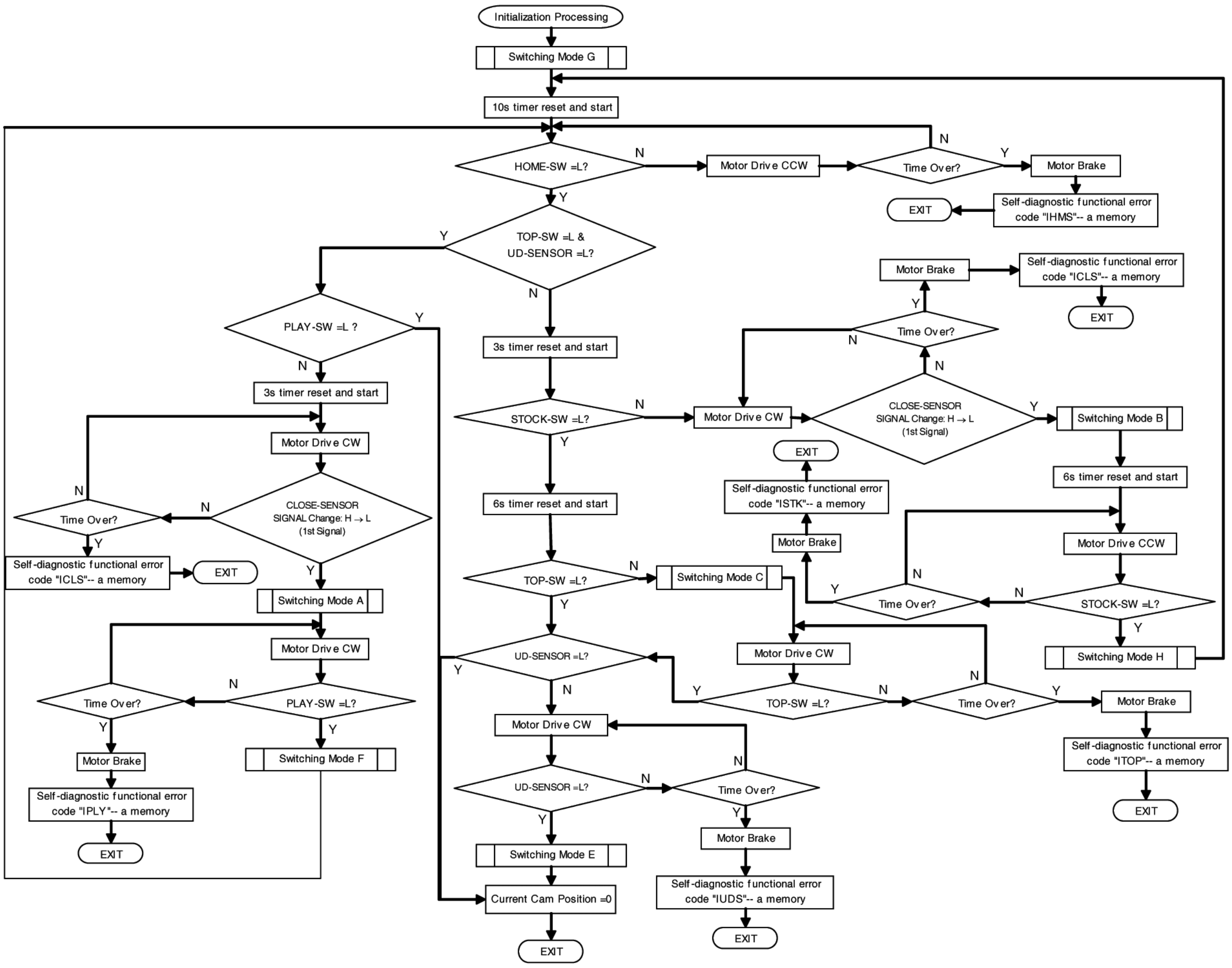
- **Mechanism Initialization** -- This mechanism is designed to operate & set to a pre-defined position to prevent malfunction when unavoidable circumstances happen. For examples: user mis-handling during transportaion or abnormal user operations.This is comply to the product shipping reliability standards.

- Mechanism is initialized when the mechanism controller is unable to detect the present condition/state of mechanism. For example, when the microcomputer carries out a cold start. (In complete unit)

- Once the initialization process is completed, the mechanism unit is set to this condition:-
  1. Tray 1 is at PLAY position (Top tray)
  2. The traverse unit is at clamping condition (PLAY SW-L)
  3. All the remaining trays are in STOCK Position (Trays 2 ~ 5)
  4. Plunger lever at release condition
  5. Cam gear is at Home position (HOME SW-L)
  6. Motor is free (CW-L, CCW-L)

  Note: This is same as shipment condition. (In complete unit)

- Below is the flow chart of the initialization process:-


Initialization Processing
Switching Mode G
10s timer reset and start
HOME-SW =L?
N
Motor Drive CCW
Time Over?
N
Y
Motor Brake
EXIT
Self-diagnostic functional error code "IHMS"-- a memory
Y
TOP-SW =L & UD-SENSOR =L?
Y
N
Motor Brake
Self-diagnostic functional error code "ICLS"-- a memory
EXIT
Y
Time Over?
N
N
PLAY-SW =L ?
Y
N
3s timer reset and start
3s timer reset and start
STOCK-SW =L?
N
Y
Motor Drive CW
CLOSE-SENSOR SIGNAL Change: H → L (1st Signal)
Y
Switching Mode B
EXIT
Self-diagnostic functional error code "ISTK"-- a memory
6s timer reset and start
Motor Drive CW
N
Time Over?
N
CLOSE-SENSOR SIGNAL Change: H → L (1st Signal)
Y
Self-diagnostic functional error code "ICLS"-- a memory
EXIT
6s timer reset and start
Motor Brake
Motor Drive CCW
TOP-SW =L?
N
Y
Switching Mode C
Time Over?
N
N
STOCK-SW =L?
Y
Switching Mode A
Motor Drive CW
Motor Drive CW
UD-SENSOR =L?
Y
Switching Mode H
N
Time Over?
N
PLAY-SW =L?
Y
N
Y
TOP-SW =L?
N
Time Over?
Y
Motor Brake
Y
Y
Motor Brake
Switching Mode F
Motor Drive CW
Self-diagnostic functional error code "ITOP"-- a memory
Self-diagnostic functional error code "IPLY"-- a memory
UD-SENSOR =L?
N
N
Time Over?
EXIT
EXIT
Y
Y
Motor Brake
Switching Mode E
Self-diagnostic functional error code "IUDS"-- a memory
Current Cam Position =0
EXIT
EXIT

The completion of Initialization process

Note:
After Initialization process, mechanism should load tray 1 to PLAY position.

3.8. Mechanism "HOME" position

- Mechanism HOME position is a starting position for few functions, such as below:
  1. Load tray from STOCK position to PLAY position
  2. Unload tray from PLAY position to STOCK position
  3. Open trays
  4. Driving UD base up/down

- Besides this, it will always return to “HOME” position after performing below functions:
  1. After tray completely clamped by Traverse unit
  2. Closing All trays
  3. Closing tray 5
  4. After completely the UD base movement

- There are 2 type of mode to go to HOME position.

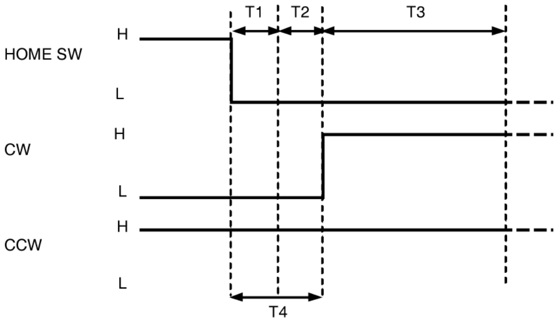
  Mode 1 is to go to HOME position and motor brake and stay at HOME position, motor need longer brake time for reduce overrun of mechanical parts.

  For Mode 2, after mechanism go to HOME position, motor immediately rotate reverse direction to go do loading/unloading processing, shorter brake time necessary to reduce the total mechanism operation time.

  The table below is types of "GO HOME" mode and operation that use it.

GO HOME MODE 1	GO HOME MODE 2
1. After loading tray to PLAY position	1. After closing all trays (no tray at PLAY position)
2. After unloading tray to STOCK position	
3. After closing all trays (one tray at PLAY position)	

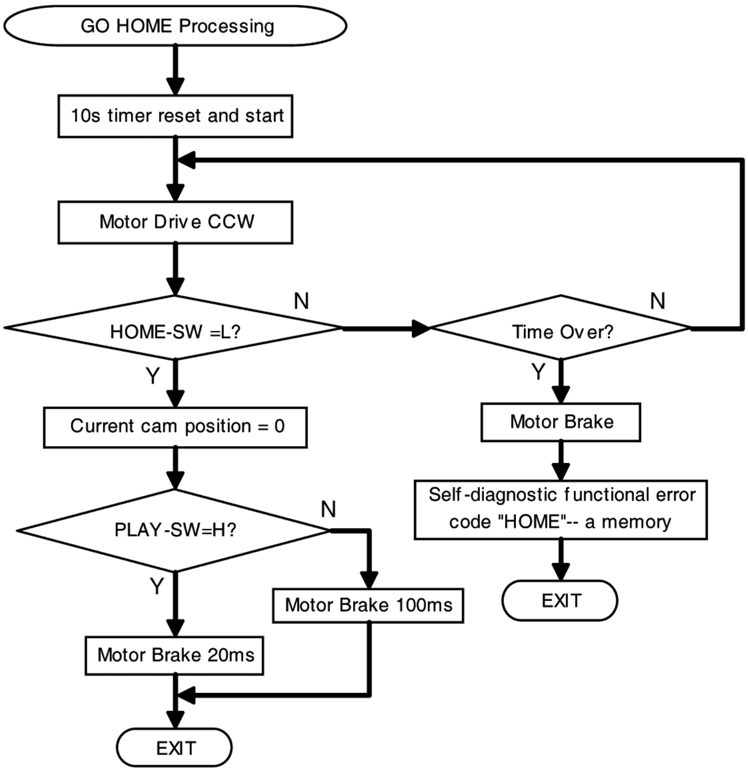
- The timing chart for the mechanism to set to “HOME” position is illustrated as below.



T1: Chattering Check = $10\ ms^{+2ms}_{-0}$
T2: Motor Wait Time = $10\ ms^{+2ms}_{-0}$
T3: Short Brake = $100\ ms \pm 10ms$ (PLAY-SW=L)
T3: Short Brake = $20\ ms \pm 10ms$ (PLAY-SW=H)
T4: T1+T2 = $20\ ms^{+4ms}_{-0}$

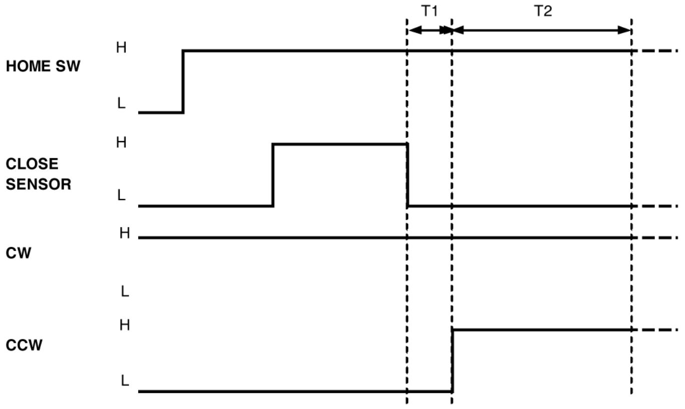
Note: T2 is time for motor free run for ensure HOME switch at stable ON condition.

- Below is the flow chart for the mechanism to set to “HOME” position.


GO HOME Processing
10s timer reset and start
Motor Drive CCW
HOME-SW =L?
N
Time Over?
N
Y
Y
Current cam position = 0
Motor Brake
Self-diagnostic functional error code "HOME"-- a memory
PLAY-SW=H?
N
Y
Motor Brake 100ms
EXIT
Motor Brake 20ms
EXIT

3.9. Mechanism "Play Driving" position

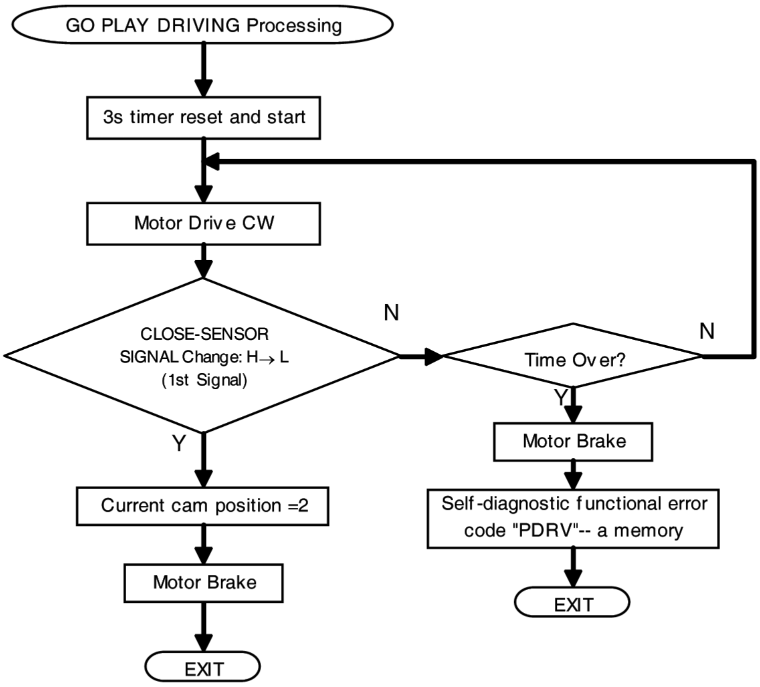
- Play driving position is a position driving source linkage to drive the tray(s) between STOCK position and PLAY position (load and unload of tray). Cam gear will rotate to this position from HOME position, and after the completion of clamping process will back to HOME position.
  For Go to Play Driving position, cam gear move from HOME position, motor brake after detect 1st time CLOSE sensor signal change from H→L



T1: Chattering Check = $10\,ms^{+2ms}_{-0}$

T2: Short Brake = $100\,ms \pm 10ms$

- Below is the flow chart for the mechanism to set PLAY DRIVING position.


GO PLAY DRIVING Processing
3s timer reset and start
Motor Drive CW
CLOSE-SENSOR SIGNAL Change: H→ L (1st Signal)
N
Time Over?
N
Y
Motor Brake
Self-diagnostic functional error code "PDRV"-- a memory
EXIT
Y
Current cam position =2
Motor Brake
EXIT

3.10. Trays Operation

3.10.1. Tray ‘Open’ Operation

- Changer mechanisms are required to open trays to load a disc. This mechanism features an "All Open" or "Change all one by one" function for quick & easy disc change. There are 3 kinds of "Tray Open" conditions.

1. **All trays open**

   Occurs when OPEN/CLOSE button is pressed, playing tray will be driven to STOCK position and all trays will driven to OPEN position. All trays will remain open until "DISC CHANGE" or "OPEN/CLOSE" is pressed. When "DISC CHANGE" is pressed, the upper most tray will close while "OPEN/CLOSE" is close all trays.

2. **Open selected tray while one tray at PLAY position**

   Occurs when specify tray is selected to be opened while one tray is at PLAY position. This operation never disturbs the playing disc operation and allow user to change desire disc on specific tray.

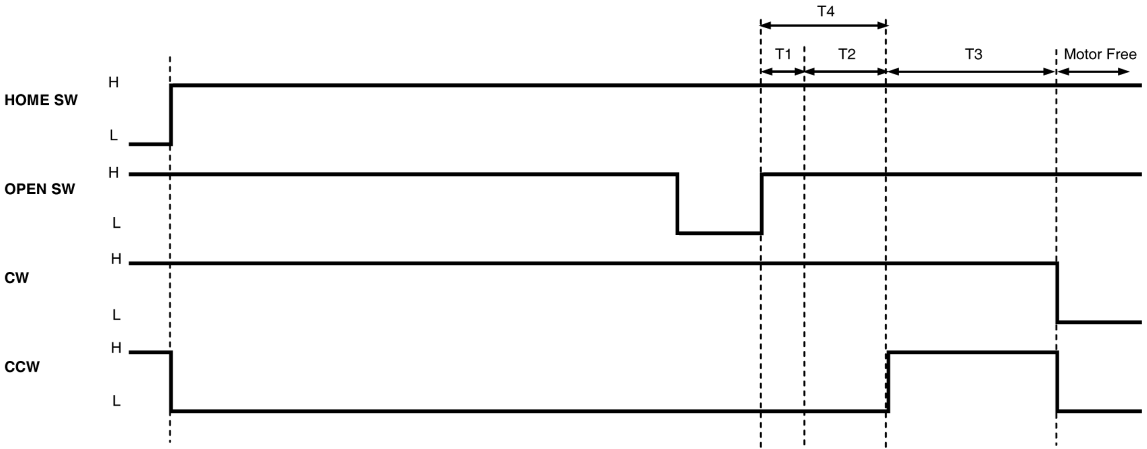
3. **Direct open playing tray**

   Occurs only when the user selects to open playing tray. Tray at PLAY position will stop recording/reproducing process and being driven to STOCK position. This will follow by driven all trays to OPEN position and trays closing until the previous playing tray expose for disc changing.Example: User press "DISC CHANGE" + "DISC 3". Mechanism opens all the trays, then closes trays 1 & 2 respectively exposing the tray 3.

- The timing chart for both positions is the same, motor rotate CW direction, until OPEN SW changing signal H→ L → H, motor need to continue run for 45ms.

- Motor free at the end of tray open, this is for enable the tray to be manually pushing by user.

- Below is the timing chart for tray opening.



T1: Chattering Check = $10\ ms^{+2ms}_{-0}$
T2: Motor Wait Time = $45\ ms^{+2ms}_{-0}$
T3: Short Brake = $100\ ms \pm 10ms$
T4: T1+T2 = $55\ ms^{+4ms}_{-0}$
Note: T2 is time for motor free run for ensure protrude trays to full stroke condition.

- For all type of trays opening, either 4 trays (open remaining) or 5 trays (all open) will be set to OPEN position.

3.10.2. Tray Closing Operation

- The following action is tray closing. For this mechanism, there are 3 types of trays closing also.

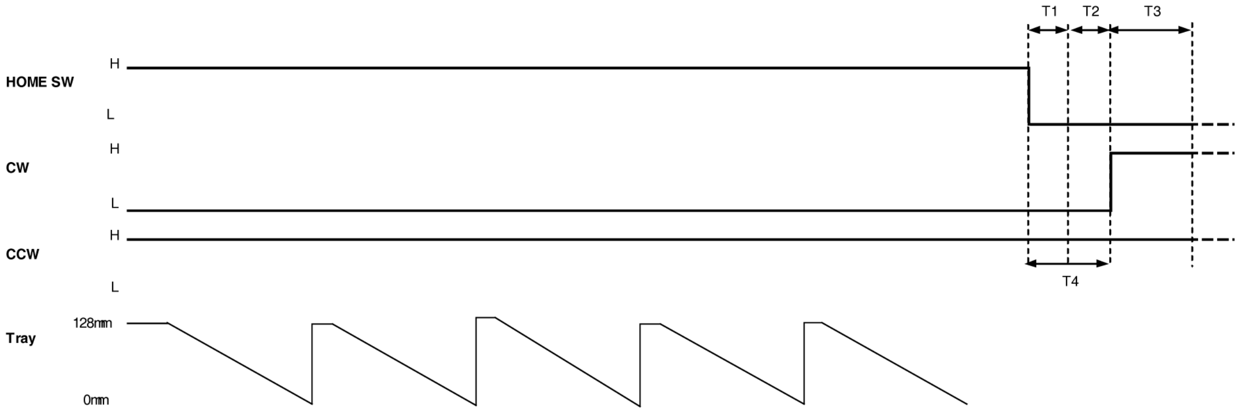
1. **All trays close**
   When user press "OPEN/CLOSE" after trays open, all trays (at any condition) will being driven to STOCK position.
2. **Auto Tray Close**
   This closing operation is an internal operation in the mechanism. This operation completes the open selected tray function. Mechanism uses this operation to drive trays that cover top surface of desire tray to STOCK position and then expose the selected tray for user to do disc exchanging.
3. **Change**
   When user press "CHANGE", one tray will be driven to STOCK position. This operation is for changing disc one by one from top to bottom. The operation each time will only drive the upper most tray to STOCK position, it can be only being interrupt by "OPEN/CLOSE". If the "CHANGE" being pressed during one tray is closing, mechanism will close the second tray immediately after 1st tray. The number of tray will be closed equal to number time of "CHANGE button" being pressed.

- All trays close can occurs anytime when there is tray at open condition. The all trays close processing is used when mechanism carry out the function as:

1. Close Tray 5
2. Close Tray 4 while tray 5 is in PLAY position
3. User press OPEN/CLOSE to instruct all trays close.

- Mechanism will close all the trays by rotating cam gear at CCW direction until detect HOME position

- Below is the timing chart for tray close (until detect HOME position).



T1: Chattering Check = $10\ ms^{+2ms}_{-0}$

T2: Motor Wait Time = $10\ ms^{+2ms}_{-0}$

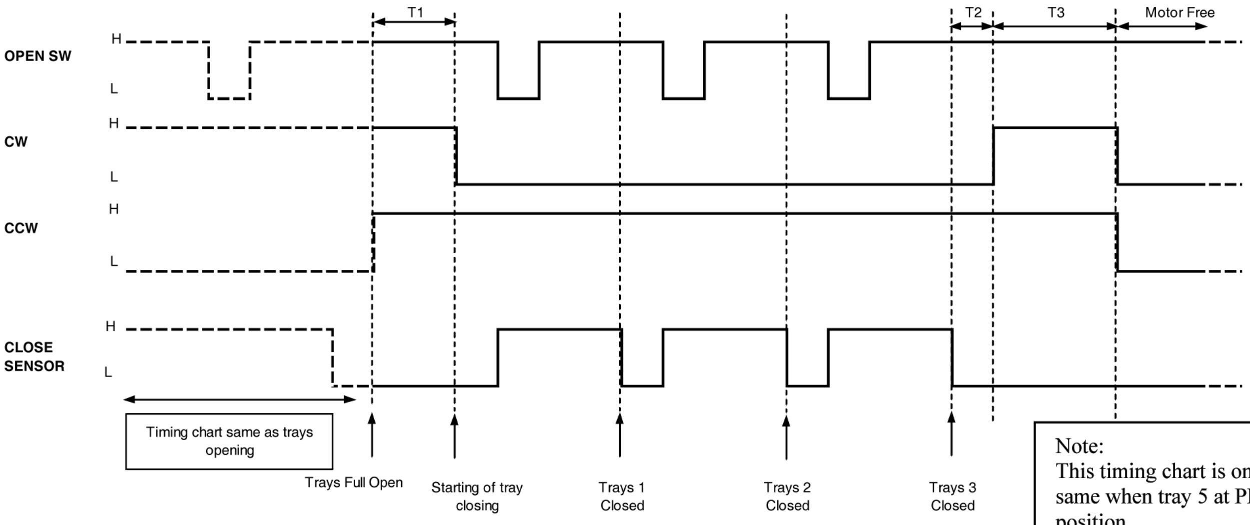
T3: Short Brake = $100\ ms \pm 10ms$

T4: T1+T2 = $20\ ms^{+4ms}_{-0}$

- Table below explain the function of open selected tray while one tray at PLAY position. This table indicated the possible tray at playing trays. For opened tray, all trays will be open except the tray at PLAY position. Trays will close to expose the selected tray for user to input or change the disc.

	OPEN POSITION	STOCK POSITION	PLAY POSITION	
Function	Tray Opened	Tray Closed	Possible Playing Tray	Micro-P Command
Open Tray 1	Tray 1 Tray 2 Tray 3 Tray 4 Tray 5			Tray Open → End
Open Tray 2	Tray 2 Tray 3 Tray 4 Tray 5	Tray 1		Tray Open → Auto Close Tray 1
Open Tray 3	Tray 3 Tray 4 Tray 5	Tray 1 Tray 2		Tray Open → Auto Close Tray 1→ Auto Close Tray 2
Open Tray 4	Tray 4 Tray 5	Tray 1 Tray 2 Tray 3		Tray Open → Auto Close Tray 1→ Auto Close Tray 2 → Auto Close Tray 3
Open Tray 5	Tray 5	Tray 1 Tray 2 Tray 3 Tray 4		Tray Open → Auto Close Tray 1→ Auto Close Tray 2 → Auto Close Tray 3 → Auto Close Tray 4

- Timing chart below, shown an example of user select to open tray 4 only.


T1
T2
T3
Motor Free
OPEN SW
H
L
CW
H
L
CCW
H
L
CLOSE SENSOR
H
L
Timing chart same as trays opening
Trays Full Open
Starting of tray closing
Trays 1 Closed
Trays 2 Closed
Trays 3 Closed

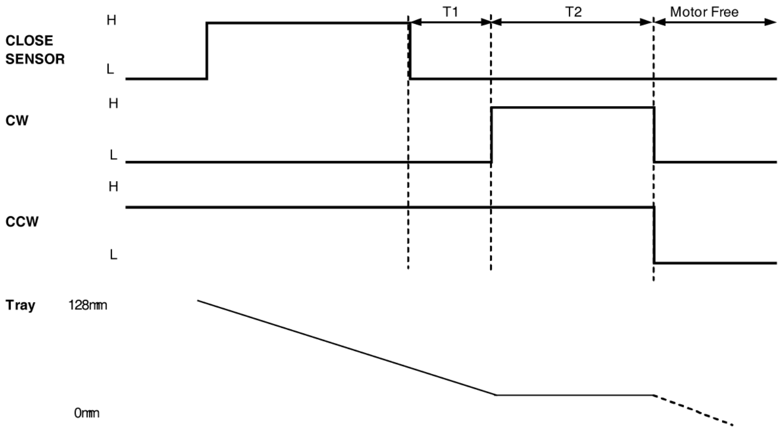
Note:
This timing chart is only same when tray 5 at PLAY position.

T1: Short Brake = $20\ ms \pm 10ms$
T2: Chattering Check = $10\ ms^{+2ms}_{-0}$
T3: Short Brake = $100\ ms \pm 10ms$

- The "Change" operation is to close one tray each time when "CHANGE" is pressed. This is the basic operation of "auto tray close". The "change" operation will stop after detect a signal change in CLOSE-SENSOR while "auto tray close" count the number of CLOSE-SENSOR signal change and stop at before selected tray start to move to STOCK position.

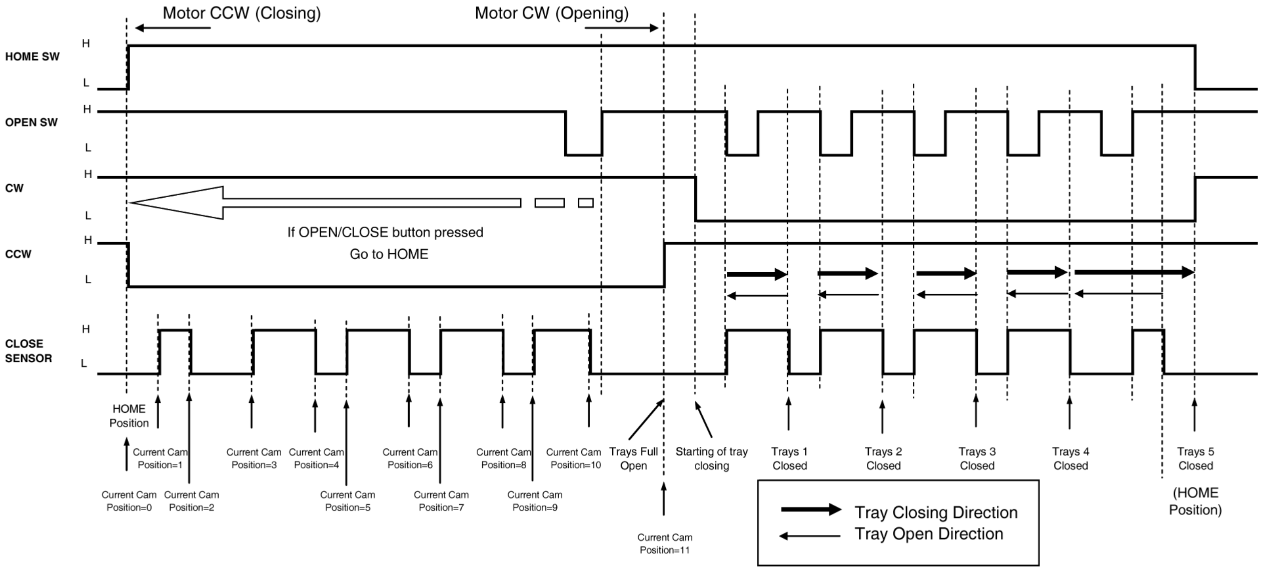
  If there is a case where user select a upper level tray of current tray in PLAY position to be closed, (e.g. current tray at PLAY position is tray 4, user select tray 3 to be open), micro-p counting of CLOSE sensor signal must done until tray 4 position, before motor brake. The reason is to eliminate long waiting time for the next tray closing.

- Below is the timing chart of tray closing (Change Operation):-

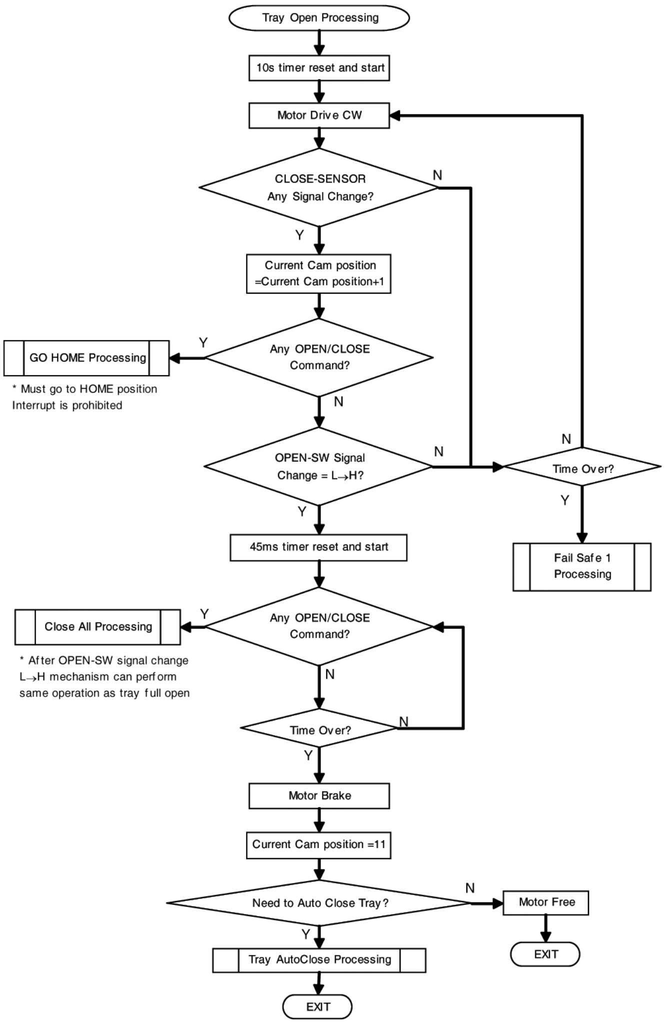

T1
T2
Motor Free
CLOSE SENSOR
H
L
CW
H
L
CCW
H
L
Tray
128mm
0mm

T1: Chattering Check = $10\ ms^{+2ms}_{-0}$
T2: Short Brake = $100\ ms \pm 10ms$

- Tray opening and closing is control by cam gear and CLOSE-SENSOR signal. OPEN-SW is only use for full open operation in order to get more accurate tray stroke. Figure below show the cam gear rotation direction for tray opening and closing, and cam important position.


Motor CCW (Closing)
Motor CW (Opening)
HOME SW
OPEN SW
CW
CCW
CLOSE SENSOR
H
L
If OPEN/CLOSE button pressed
Go to HOME
HOME Position
Current Cam Position=0
Current Cam Position=1
Current Cam Position=2
Current Cam Position=3
Current Cam Position=4
Current Cam Position=5
Current Cam Position=6
Current Cam Position=7
Current Cam Position=8
Current Cam Position=9
Current Cam Position=10
Trays Full Open
Current Cam Position=11
Starting of tray closing
Trays 1 Closed
Trays 2 Closed
Trays 3 Closed
Trays 4 Closed
Trays 5 Closed
(HOME Position)
Tray Closing Direction
Tray Open Direction

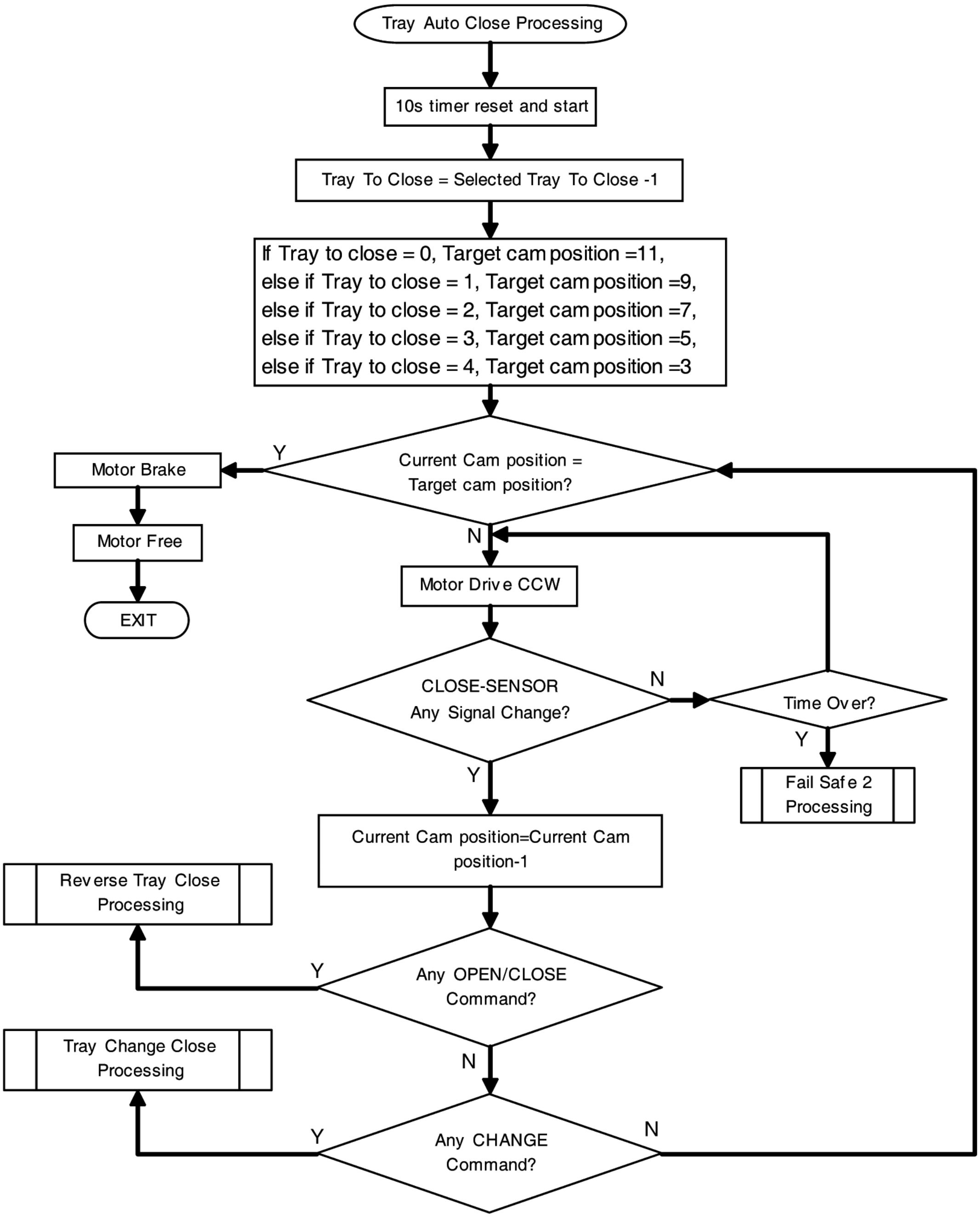
· Below is the flow chart for tray open processing.

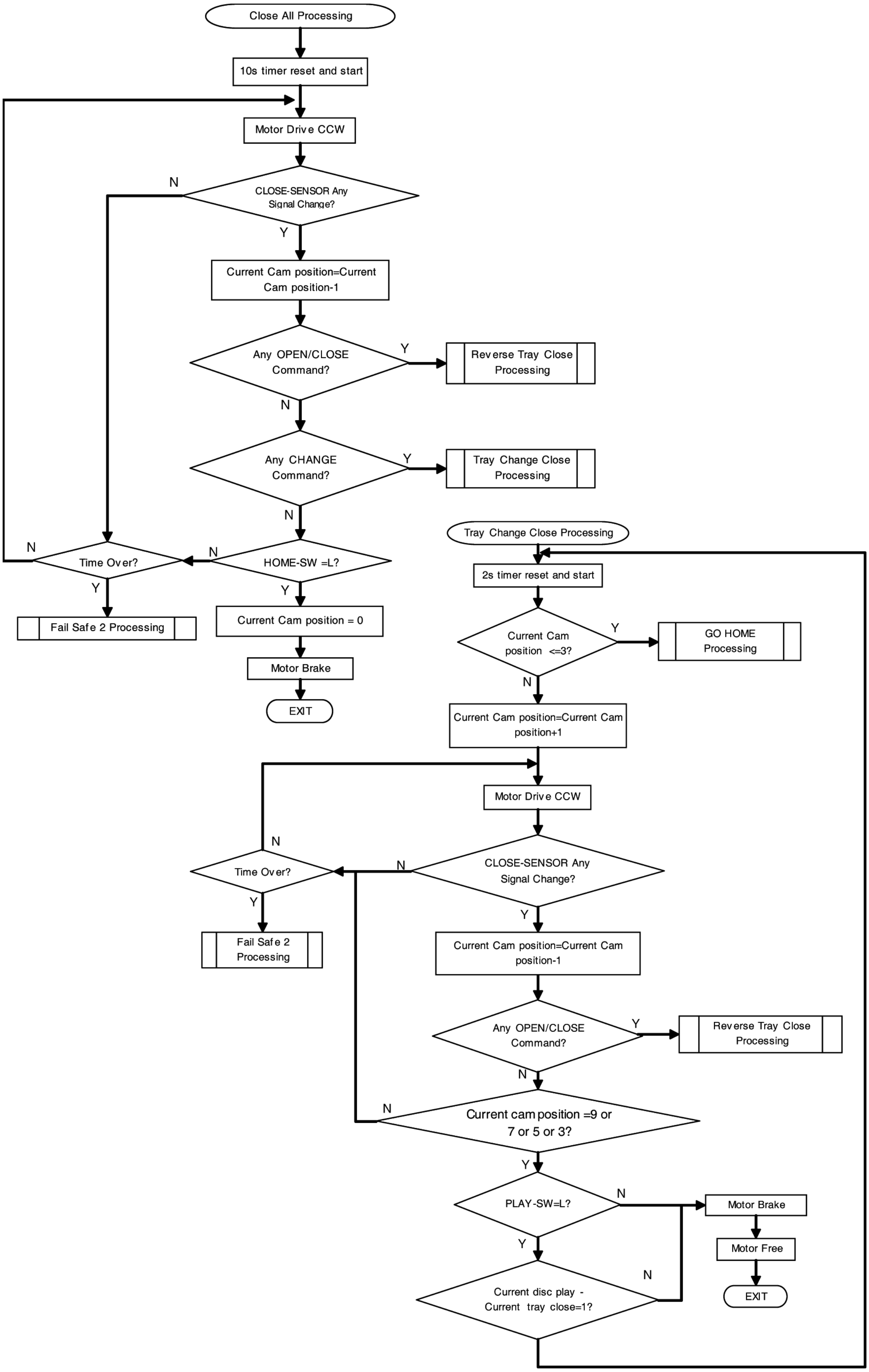

Tray Open Processing
10s timer reset and start
Motor Drive CW
CLOSE-SENSOR Any Signal Change?
Y
N
Current Cam position =Current Cam position+1
Any OPEN/CLOSE Command?
Y
GO HOME Processing
* Must go to HOME position Interrupt is prohibited
N
OPEN-SW Signal Change = L→H?
N
Time Over?
N
Y
Fail Safe 1 Processing
Y
45ms timer reset and start
Any OPEN/CLOSE Command?
Y
Close All Processing
* After OPEN-SW signal change L→H mechanism can perform same operation as tray full open
N
Time Over?
N
Y
Motor Brake
Current Cam position =11
Need to Auto Close Tray?
N
Motor Free
EXIT
Y
Tray AutoClose Processing
EXIT

· The flow charts below shown the types of tray close processing, for tray auto close processing is use if user select a specify tray to be close automatically after trays full open.

· Tray change close processing use if use select a function and want to change disc one by one from top tray to bottom tray.

- Close all processing is use when user wants to close all trays at once, or want to close tray no.5 or close tray no.4 while tray no. 5 is at PLAY position.

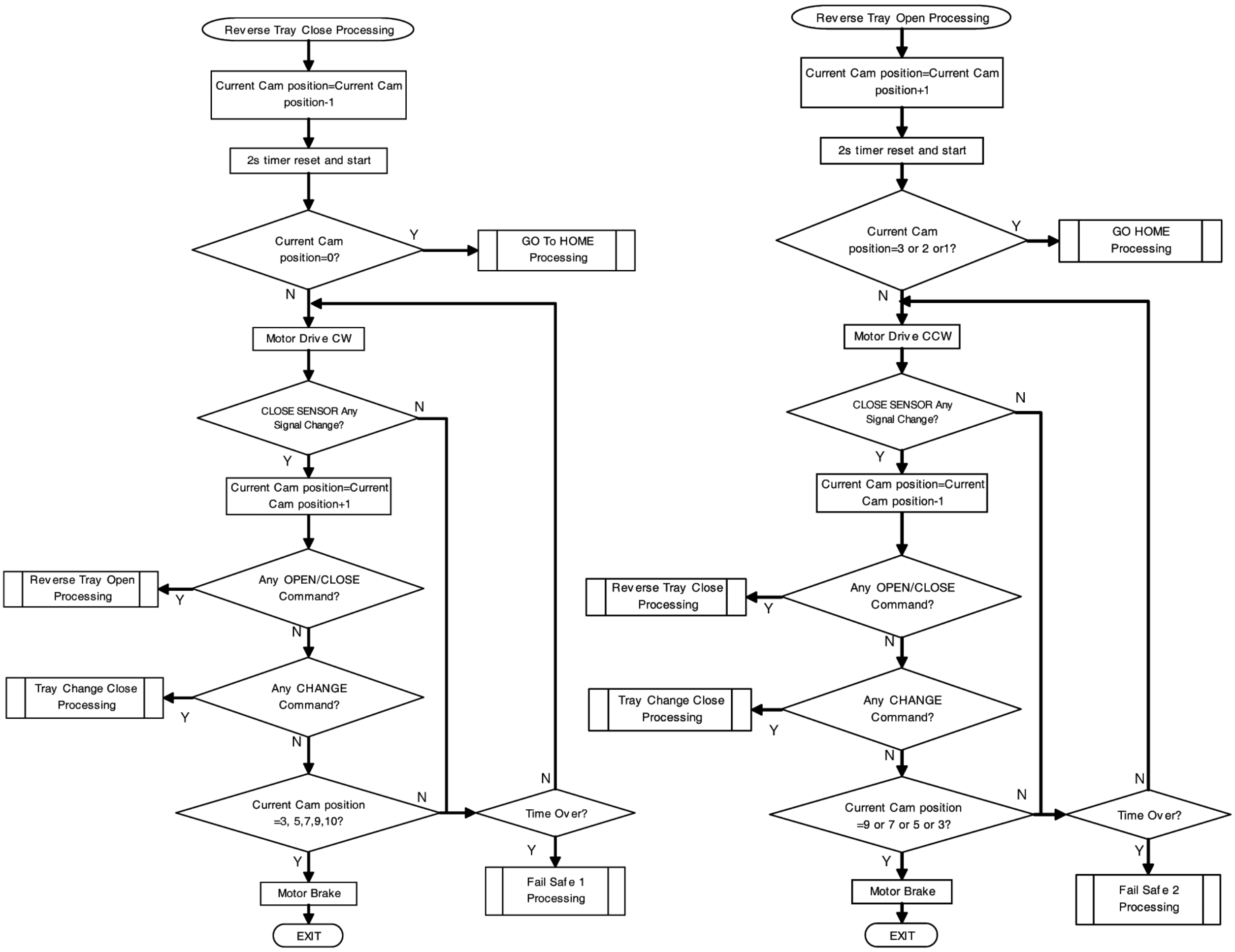

Tray Auto Close Processing
10s timer reset and start
Tray To Close = Selected Tray To Close -1
If Tray to close = 0, Target cam position =11,
else if Tray to close = 1, Target cam position =9,
else if Tray to close = 2, Target cam position =7,
else if Tray to close = 3, Target cam position =5,
else if Tray to close = 4, Target cam position =3
Current Cam position = Target cam position?
Y
Motor Brake
Motor Free
EXIT
N
Motor Drive CCW
CLOSE-SENSOR Any Signal Change?
N
Time Over?
Y
Fail Safe 2 Processing
Y
Current Cam position=Current Cam position-1
Reverse Tray Close Processing
Y
Any OPEN/CLOSE Command?
N
Tray Change Close Processing
Y
Any CHANGE Command?
N


Close All Processing
10s timer reset and start
Motor Drive CCW
CLOSE-SENSOR Any Signal Change?
N
Y
Current Cam position=Current Cam position-1
Any OPEN/CLOSE Command?
Y
Reverse Tray Close Processing
N
Any CHANGE Command?
Y
Tray Change Close Processing
N
HOME-SW =L?
N
Time Over?
N
Y
Fail Safe 2 Processing
Y
Current Cam position = 0
Motor Brake
EXIT
Tray Change Close Processing
2s timer reset and start
Current Cam position <=3?
Y
GO HOME Processing
N
Current Cam position=Current Cam position+1
Motor Drive CCW
CLOSE-SENSOR Any Signal Change?
N
Time Over?
N
Y
Fail Safe 2 Processing
Y
Current Cam position=Current Cam position-1
Any OPEN/CLOSE Command?
Y
Reverse Tray Close Processing
N
Current cam position =9 or 7 or 5 or 3?
N
Y
PLAY-SW=L?
N
Motor Brake
Motor Free
EXIT
Y
Current disc play - Current tray close=1?
N

- When there is a OPEN/CLOSE button pressed during tray open or tray close operation. Motor will rotate revere direction. There are 2 type of cases, where 1st is before full open condition (open/close gear assembly still resting) and the 2nd is after trays full open condition. For the 1st condition, motor will rotate the cam gear to move between HOME direction and tray open

While for the 2nd case, cam gear inside mechanism will move between specific positions by checking CLOSE-SENSOR signal change.

- The flow chart for both open reverse (when tray opening motor reverse) and close reverse (when tray closing motor reverse) is as below. The operation use when user press OPEN/CLOSE button during tray is opening or closing.


Reverse Tray Close Processing
Current Cam position=Current Cam position-1
2s timer reset and start
Current Cam position=0?
Y
GO To HOME Processing
N
Motor Drive CW
CLOSE SENSOR Any Signal Change?
N
Y
Current Cam position=Current Cam position+1
Reverse Tray Open Processing
Y
Any OPEN/CLOSE Command?
N
Tray Change Close Processing
Y
Any CHANGE Command?
N
Current Cam position =3, 5,7,9,10?
N
N
Time Over?
Y
Fail Safe 1 Processing
Y
Motor Brake
EXIT
Reverse Tray Open Processing
Current Cam position=Current Cam position+1
2s timer reset and start
Current Cam position=3 or 2 or1?
Y
GO HOME Processing
N
Motor Drive CCW
CLOSE SENSOR Any Signal Change?
N
Y
Current Cam position=Current Cam position-1
Reverse Tray Close Processing
Y
Any OPEN/CLOSE Command?
N
Tray Change Close Processing
Y
Any CHANGE Command?
N
Current Cam position =9 or 7 or 5 or 3?
N
N
Time Over?
Y
Fail Safe 2 Processing
Y
Motor Brake
EXIT

3.11. Drive tray between STOCK and PLAY position

- Play position is defined as the position whereas the tray is aligned to be played over the CD/ DVD unit. Only a single tray can be at this location & note that the traverse mechanism is at its clamped position. Play position can be either disc playing (actively reading disc data) or its not playing (no data reading).

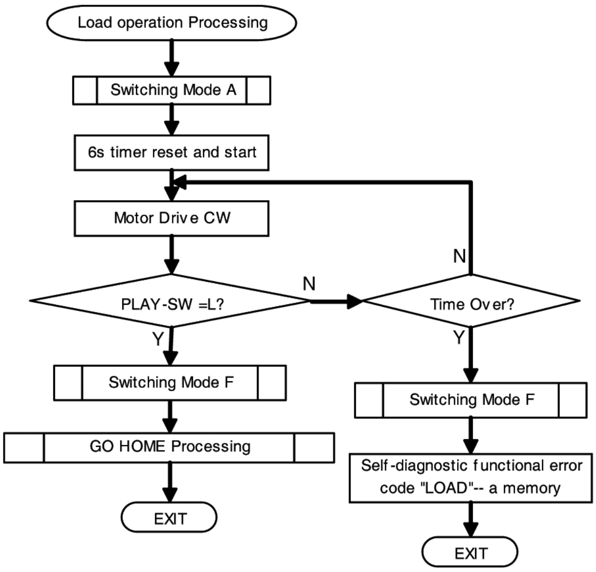
  * **Shipment** or **Initialize** positions always finish with a tray at this location.

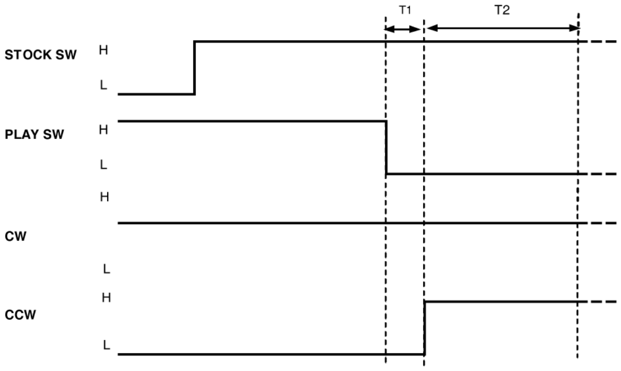
- Loading operation is process to move tray from STOCK position to PLAY position.

- Unloading operation is process to move tray from PLAY position to STOCK position.

- If there is a certain operation key pressed at the middle of movement. The reversal operation is necessary. The reversal operation should carry out after the tray arriving the STOCK position or PLAY position.

- The flow chart and timing chart for load a disc from STOCK position to PLAY position is as below:

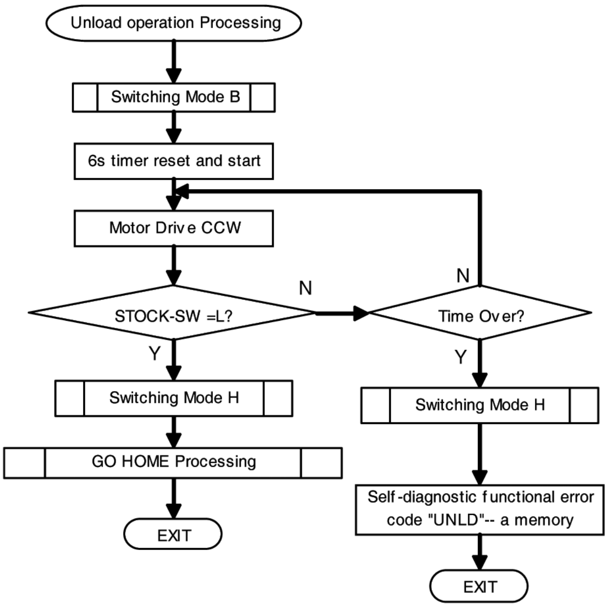

Load operation Processing
Switching Mode A
6s timer reset and start
Motor Drive CW
PLAY-SW =L?
N
Y
Time Over?
N
Y
Switching Mode F
GO HOME Processing
EXIT
Switching Mode F
Self-diagnostic functional error code "LOAD"-- a memory
EXIT

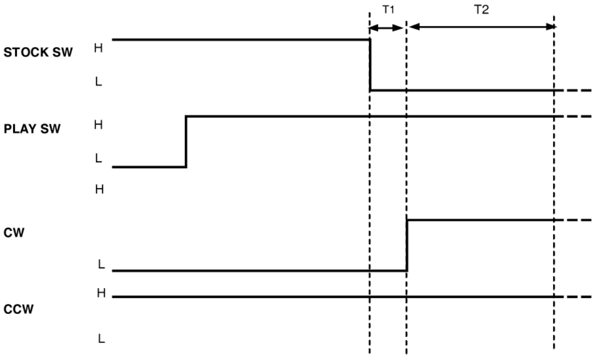

T1
T2
STOCK SW
H
L
PLAY SW
H
L
H
CW
L
H
CCW
L

T1: Chattering Check = $10\ ms^{+2ms}_{-0}$

T2: Short Brake = $100\ ms \pm 10ms$

- The flow chart and timing chart for unload a disc from PLAY position to STOCK position is as below:


Unload operation Processing
Switching Mode B
6s timer reset and start
Motor Drive CCW
STOCK-SW =L?
N
Y
Time Over?
N
Y
Switching Mode H
GO HOME Processing
EXIT
Switching Mode H
Self-diagnostic functional error code "UNLD"-- a memory
EXIT


T1
T2
STOCK SW
H
L
PLAY SW
H
L
H
CW
L
H
CCW
L

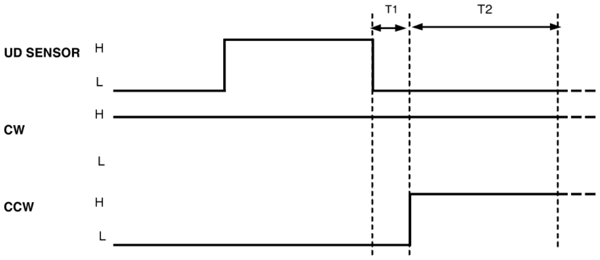
T1: Chattering Check = $10\ ms^{+2ms}_{-0}$

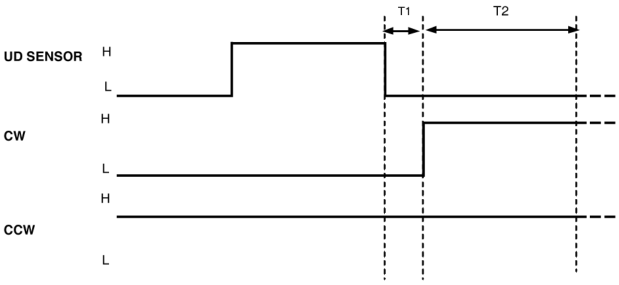
T2: Short Brake = $100\ ms \pm 10ms$

3.12. Selection of Tray by Moving UD base Up/down

- Tray alignment & selection is achieved by UD (up/down) movement, whereas the Mechanism vertically aligns itself to the selected tray to be driven to PLAY position or STOCK position. The upper most tray is defined as tray 1 and bottom most tray is defined as tray 5. Counting is achieved by resetting during initialization to the TOP-SW (tray 1) and counting the signal change by UD-SENSOR.

- Below are the timing chart for UD base tray selection Up/down:


T1
T2
UD SENSOR
H
L
CW
H
L
CCW
H
L

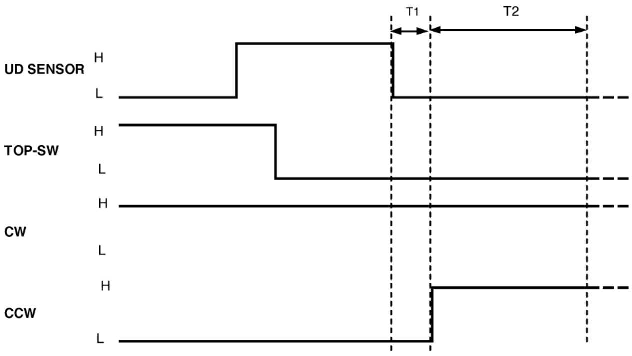

T1
T2
UD SENSOR
H
L
CW
H
L
CCW
H
L

UD base move up 5 → 2

UD base move up 1 → 5

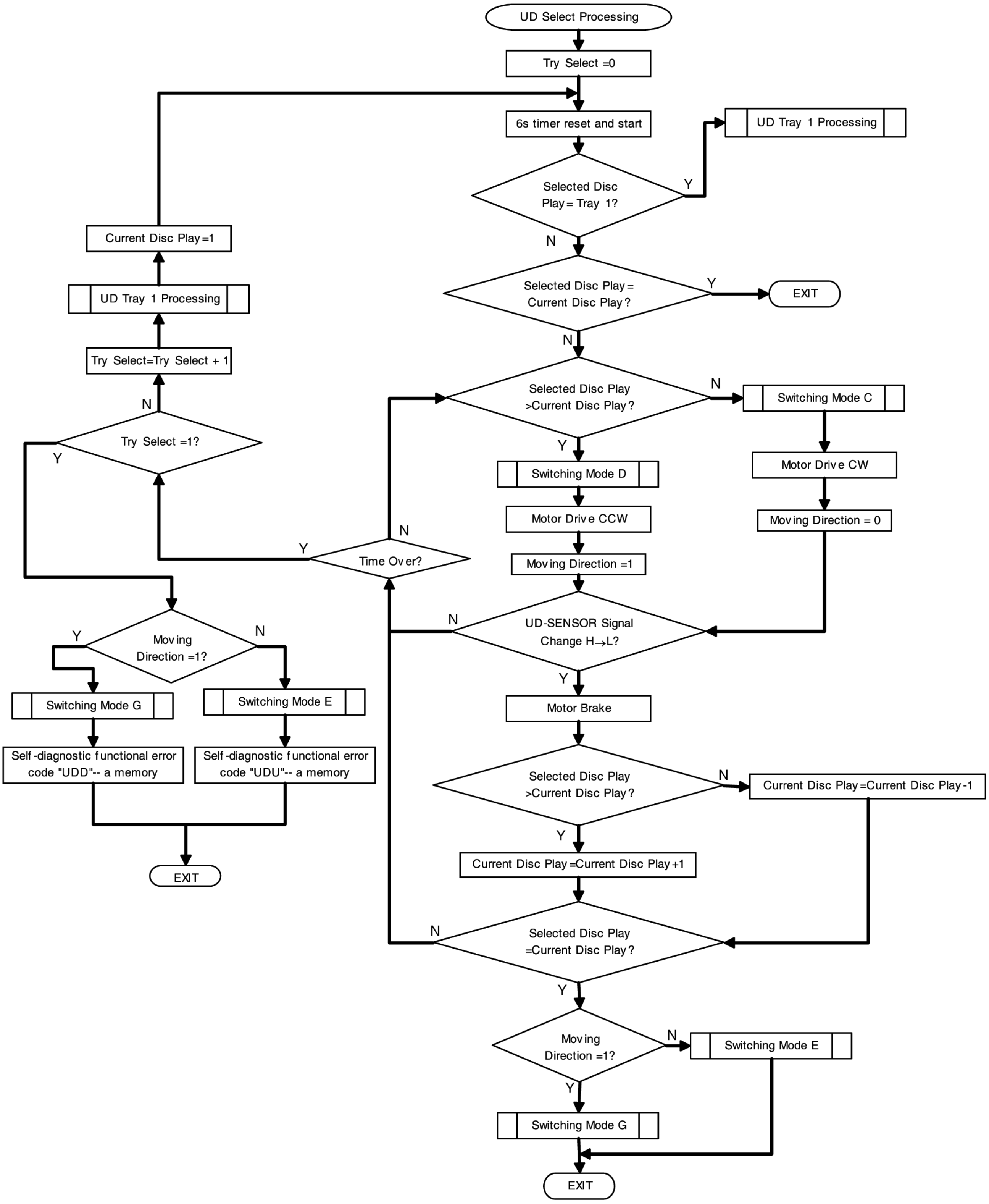
T1: Chattering Check = $10\ ms^{+2ms}_{-0}$
T2: Short Brake = $100\ ms \pm 10ms$

· Tray 1 is the reset position for UD base up/down processing. The position should be unique; a TOP-SW is use in this purpose.

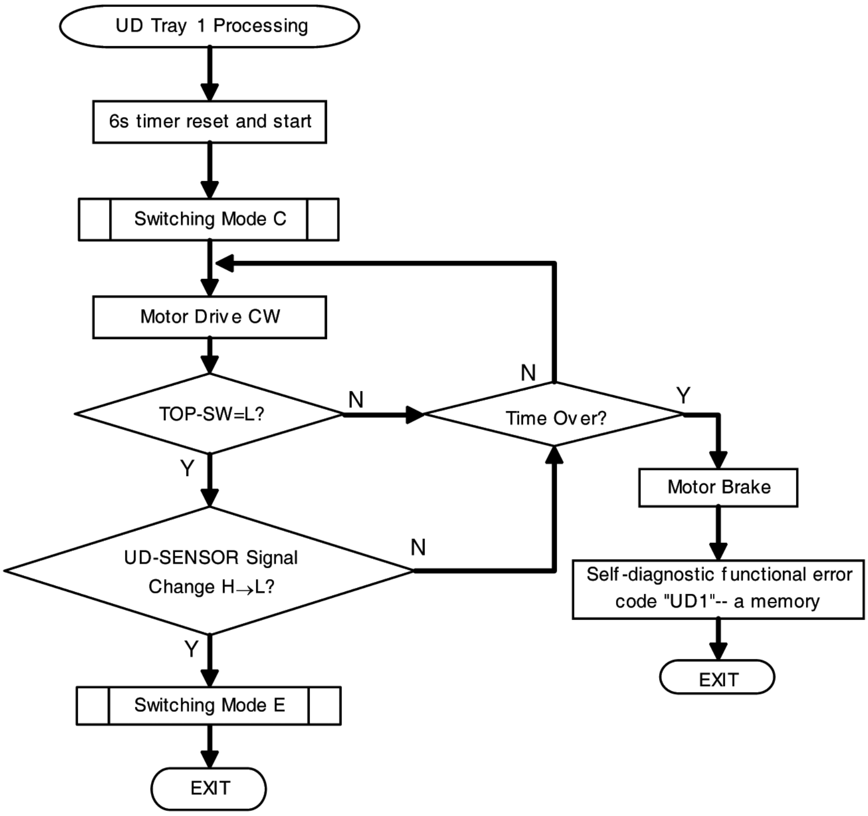

T1
T2
UD SENSOR
H
L
TOP-SW
H
L
CW
H
L
CCW
H
L

T1: Chattering Check = $10\ ms^{+2ms}_{-0}$
T2: Short Brake = $100\ ms \pm 10ms$

· Below is the flow chart for UD selection processing.


UD Select Processing
Try Select =0
6s timer reset and start
Selected Disc Play = Tray 1?
Y
UD Tray 1 Processing
N
Selected Disc Play = Current Disc Play?
Y
EXIT
N
Selected Disc Play >Current Disc Play?
N
Switching Mode C
Motor Drive CW
Moving Direction = 0
Y
Switching Mode D
Motor Drive CCW
Moving Direction =1
UD-SENSOR Signal Change H→L?
N
Y
Motor Brake
Selected Disc Play >Current Disc Play?
N
Current Disc Play=Current Disc Play-1
Y
Current Disc Play=Current Disc Play+1
Selected Disc Play =Current Disc Play?
N
Y
Moving Direction =1?
N
Switching Mode E
Y
Switching Mode G
EXIT
Time Over?
N
Y
Try Select =1?
N
Y
Try Select=Try Select + 1
UD Tray 1 Processing
Current Disc Play=1
Moving Direction =1?
Y
N
Switching Mode G
Switching Mode E
Self-diagnostic functional error code "UDD"-- a memory
Self-diagnostic functional error code "UDU"-- a memory
EXIT

- For tray 1 selection, flow chart below will be used.


UD Tray 1 Processing
6s timer reset and start
Switching Mode C
Motor Drive CW
TOP-SW=L?
N
Y
Time Over?
N
Y
Motor Brake
UD-SENSOR Signal Change H→L?
N
Y
Self-diagnostic functional error code "UD1"-- a memory
EXIT
Switching Mode E
EXIT

3.13. Fail Safe

- Fail safe function is for purpose of recovery of tray movement if the mechanism is not able to carry out tray open or close within a specified time.

Fail safe 1: Tray can not open: Fail safe - move all trays to home position

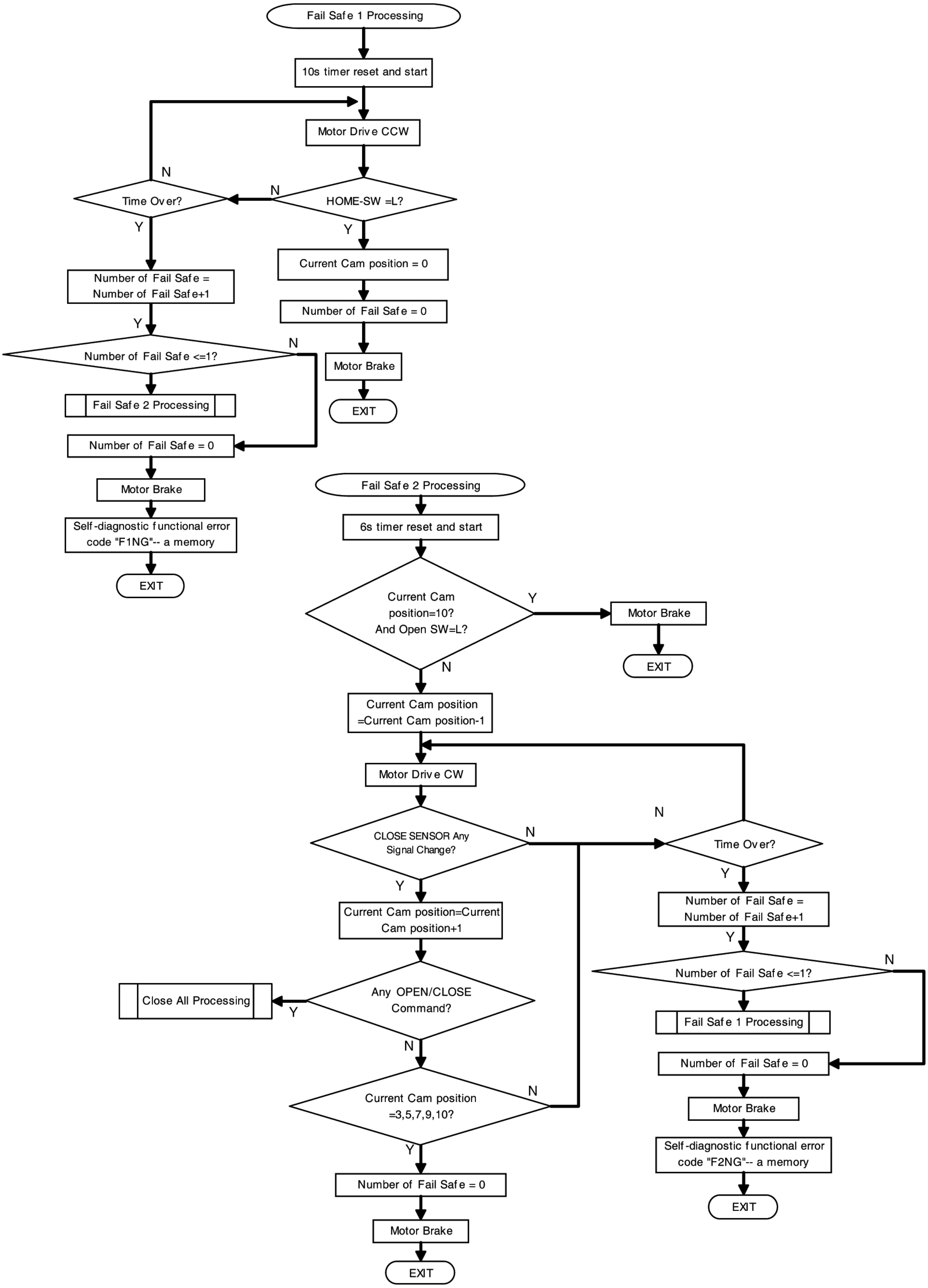
Fail safe 2: Tray can not close: Fail safe - move to next close sensor transition position

Note : For Fail safe 2 :

1. If done on tray 1 - will fully go to Open position because OC gears are fully engaged
2. If done on either one of the remaining trays (2, 3, 4 & 5) - will only release the gear engagement and leave the tray at free condition, tray can only open manually by user.

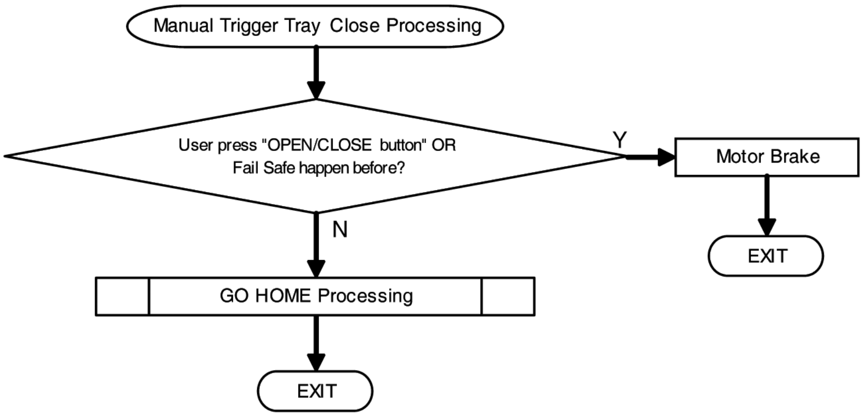
After fail safe, any subsequent button pressed on main set, the mechanism must follow "GO HOME" flowchart.

- Fail safe flow chart are shown as below:


Fail Safe 1 Processing
10s timer reset and start
Motor Drive CCW
HOME-SW =L?
N
Time Over?
N
Y
Y
Current Cam position = 0
Number of Fail Safe = 0
Motor Brake
EXIT
Number of Fail Safe = Number of Fail Safe+1
Y
Number of Fail Safe <=1?
N
Fail Safe 2 Processing
Number of Fail Safe = 0
Motor Brake
Self-diagnostic functional error code "F1NG"-- a memory
EXIT
Fail Safe 2 Processing
6s timer reset and start
Current Cam position=10? And Open SW=L?
Y
Motor Brake
EXIT
N
Current Cam position =Current Cam position-1
Motor Drive CW
CLOSE SENSOR Any Signal Change?
N
Time Over?
N
Y
Number of Fail Safe = Number of Fail Safe+1
Y
Number of Fail Safe <=1?
N
Fail Safe 1 Processing
Number of Fail Safe = 0
Motor Brake
Self-diagnostic functional error code "F2NG"-- a memory
EXIT
Y
Current Cam position=Current Cam position+1
Any OPEN/CLOSE Command?
Y
Close All Processing
N
Current Cam position =3,5,7,9,10?
N
Y
Number of Fail Safe = 0
Motor Brake
EXIT

3.14. Manual Trigger Tray Close

- When user push open tray at full open position, user may able to activate tray to be all close. This function will be disable if user happen to press "OPEN/CLOSE" button and fail safe happen before.


Manual Trigger Tray Close Processing
User press "OPEN/CLOSE button" OR Fail Safe happen before?
Y
Motor Brake
EXIT
N
GO HOME Processing
EXIT

3.15. Changer Error Code

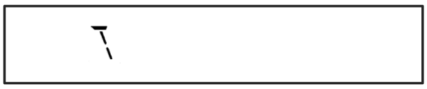
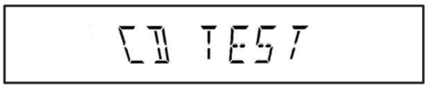
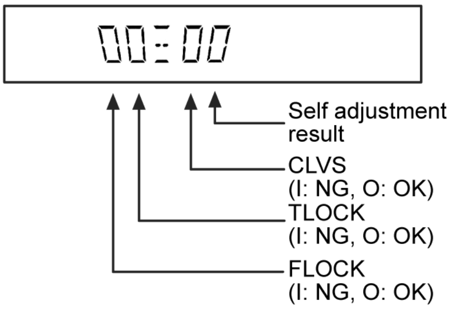
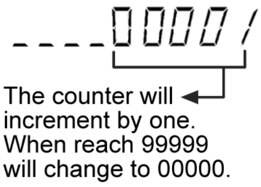
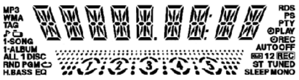
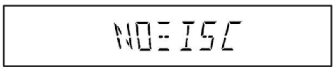
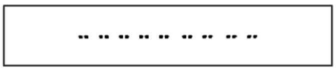
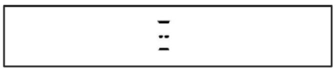
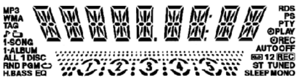
- The error code summary of CRS1 changer is as below:

Error Code	Operation
IHMS	Cam gear rotate to HOME position
ICLS	Cam gear rotate to Play Driving position to drive playing tray to STOCK position
ISTK	Move tray drive rack to STOCK position (drive tray to STOCK position)
IPLY	Move tray drive rack to PLAY position (drive tray to PLAY position)
ITOP	Move UD rack R to front direction (raise UD base to top position)
IUDS	After TOP-SW detect, UD rack move to tray 1 position
HOME	After load tray to PLAY position, cam gear move to HOMEAfter unload to STOCK position, cam gear move to HOME After all tray close, cam gear go to HOME position
LOAD	Tray move from STOCK to PLAY position
UNLD	Tray move from PLAY to STOCK position
PDRV	Cam gear move from HOME to Play Driving position
UDU	UD base move at up direction (from tray 5 to tray 2)
UDD	UD base move at down direction (from tray 1 to tray 5)
UD1	UD base move to tray 1
F1NG	Fail safe 1 NG (Fail safe 1 unsuccessful then try Fail Safe 2 also unsuccesful)
F2NG	Fail safe 2 NG (Fail safe 2 unsuccessful then try Fail Safe 1 also unsuccesful)

4 Self diagnosis and special mode setting

This unit is equipped with functions for checking and inspecting namely: Self-Diagnostic and Test Mode.

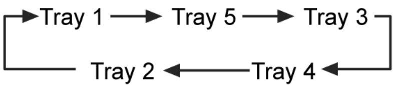
4.1. Special Mode Table

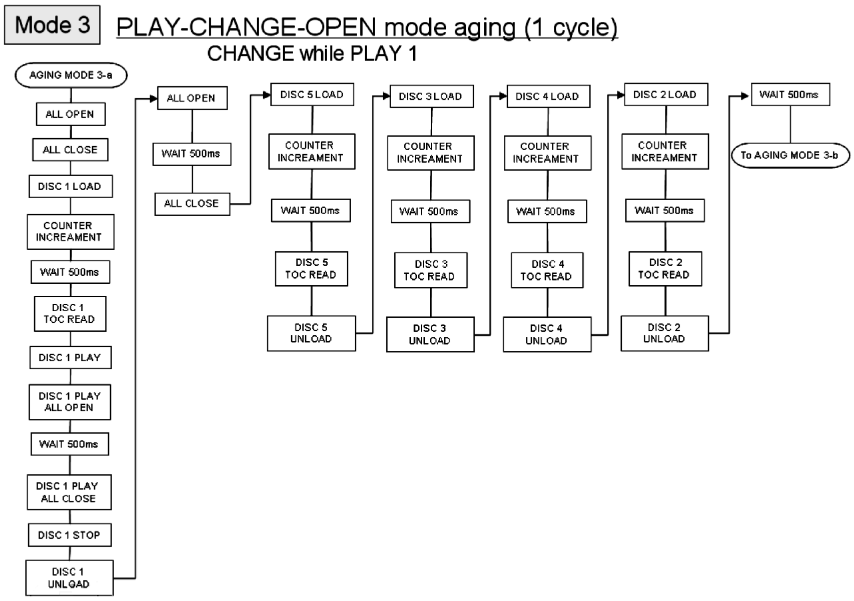
Item		FL Display	Key Operation
Mode Name	**Description**		**Front Key**
Self -Diagnostic Mode	To enter into self diagnostic checking for main unit.		1. Select [▶, TAPE] for TAPE mode (Ensure no tape is inserted). 2. Press and hold [■, STOP]button for 3 seconds follow by [▶▶I, ∧/FF]. To exit, press [⏻/I, POWER] button on main unit or remote control.
CD Test Mode	To enter into checking the reliability of changer unit.		1. Select [▶/II, CD] for CD mode. 2. Press and hold [■, STOP] button for 3 seconds follow by [▶▶I, ∧/FF]. To exit, press [⏻/I, POWER] button on main unit or remote control.
CD Auto Adjustment	To check the CD auto adjustment result for FLOCK, TLOCK and CLVS.	 00:00 Self adjustment result CLVS (I: NG, O: OK) TLOCK (I: NG, O: OK) FLOCK (I: NG, O: OK)	In CD Test Mode: 1. Press [0] button on the remote control. To exit, press [⏻/I, POWER] button on main unit or remote control.
CD Changer Reliability Test (CRS1)	To determine the reliability of CD Changer Unit. (For more information, refer to section 4.1.1)	 ----00001 The counter will increment by one. When reach 99999 will change to 00000.	In Self-Diagnostic Mode: 1. Select [▶/II, CD] for CD mode. 2. Press [I◀◀, REW/∨] button. To exit, press [⏻/I, POWER] button on main unit or remote control. (The tray will return to PLAY position and then power off)
Doctor Mode	To enter into Doctor Mode for checking of various items and displaying EEPROM and firmware version.	1.  2.  1. All segments will light up for 1 second. 2. The Check Sum of EEPROM and firmware version will be display. * ROM correction ** Firmware version No:	In any mode: 1. Press [■, STOP] button on main unit follow by [4] and [7] on remote control. To exit, press [ENTER] button on remote control or [⏻/I, POWER] button on main unit or remote control.
Cold Start	To activate cold start upon next AC power up.		In doctor mode: 1. Press [4] button on remote control. To exit, press [ENTER] button on remote control or [⏻/I, POWER] button on main unit or remote control.
Changer Reliability Test	To check the function operation of changer unit. (For more information, refer to 4.1.1)		In doctor mode: 1. Press [DISC] on remote control. To exit, press [ENTER] button on remote control or [⏻/I, POWER] button on main unit or remote control.
FL Display Test	To check the FL segments display (All segments will light up and LED will blink at 0.5 second interval)		In doctor mode: 1. Press [PROGRAM] button on remote control.

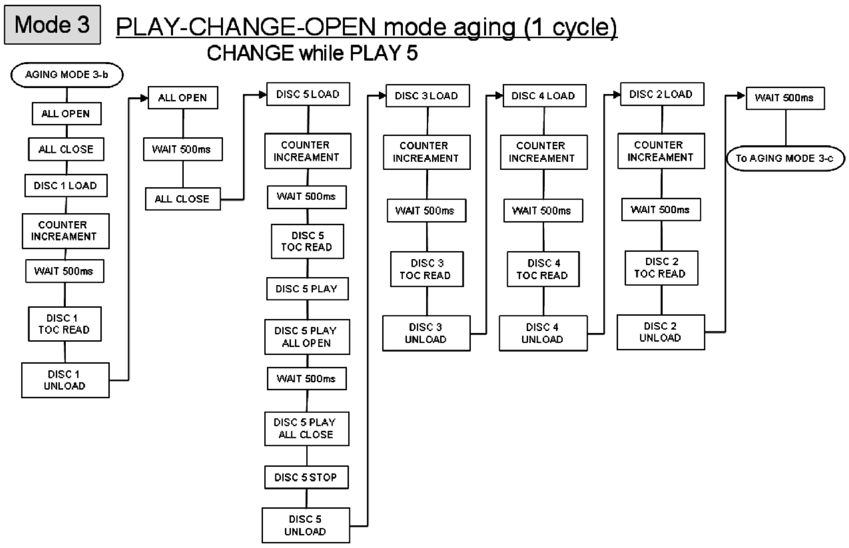
Item		FL Display	Key Operation
Mode Name	**Description**		**Front Key**
Tape Eject Test	To check on the tape eject function (For deck 1/2)		In doctor mode: 1. Press [PROGRAM] button on remote control.

4.1.1. CD changer unit ageing test mode

Below is the process flow chart of ageing for the CD changer unit.

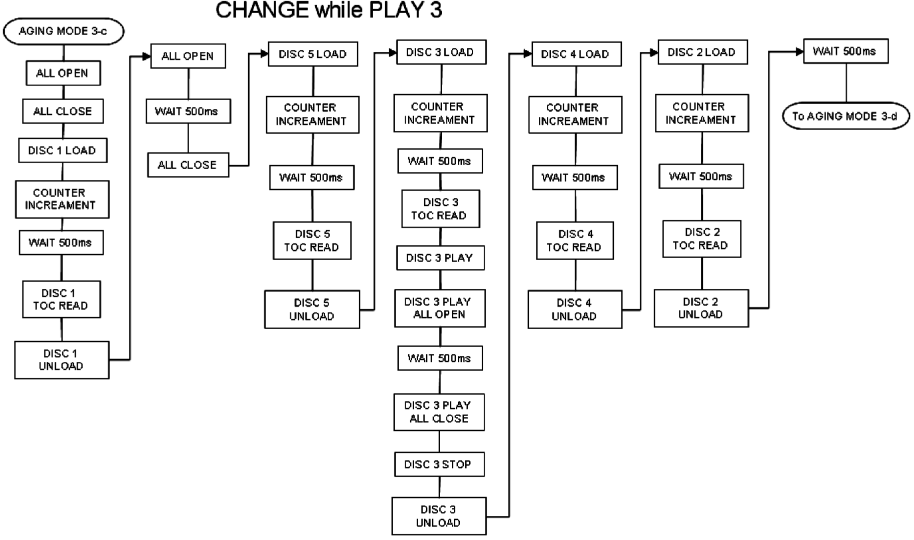

Tray 1
Tray 5
Tray 3
Tray 4
Tray 2


Mode 3
PLAY-CHANGE-OPEN mode aging (1 cycle)
CHANGE while PLAY 1
AGING MODE 3-a
ALL OPEN
ALL CLOSE
DISC 1 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 1 TOC READ
DISC 1 PLAY
DISC 1 PLAY ALL OPEN
WAIT 500ms
DISC 1 PLAY ALL CLOSE
DISC 1 STOP
DISC 1 UNLOAD
ALL OPEN
WAIT 500ms
ALL CLOSE
DISC 5 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 5 TOC READ
DISC 5 UNLOAD
DISC 3 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 3 TOC READ
DISC 3 UNLOAD
DISC 4 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 4 TOC READ
DISC 4 UNLOAD
DISC 2 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 2 TOC READ
DISC 2 UNLOAD
WAIT 500ms
To AGING MODE 3-b


Mode 3
PLAY-CHANGE-OPEN mode aging (1 cycle)
CHANGE while PLAY 5
AGING MODE 3-b
ALL OPEN
ALL CLOSE
DISC 1 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 1 TOC READ
DISC 1 UNLOAD
ALL OPEN
WAIT 500ms
ALL CLOSE
DISC 5 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 5 TOC READ
DISC 5 PLAY
DISC 5 PLAY ALL OPEN
WAIT 500ms
DISC 5 PLAY ALL CLOSE
DISC 5 STOP
DISC 5 UNLOAD
DISC 3 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 3 TOC READ
DISC 3 UNLOAD
DISC 4 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 4 TOC READ
DISC 4 UNLOAD
DISC 2 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 2 TOC READ
DISC 2 UNLOAD
WAIT 500ms
To AGING MODE 3-c

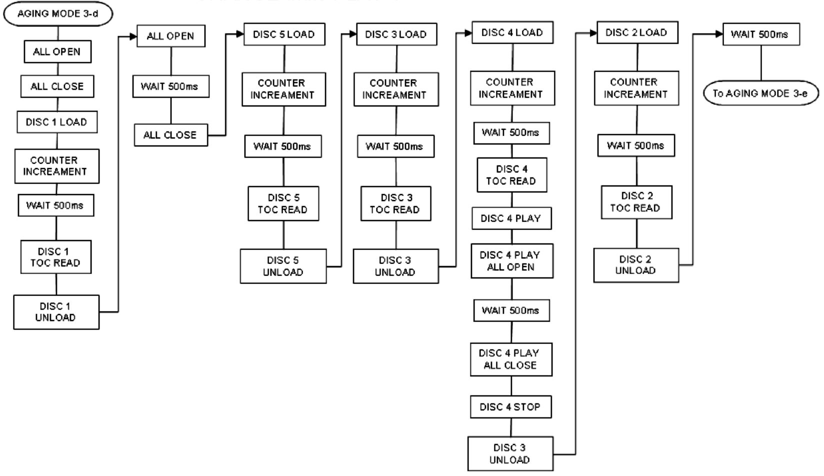
Mode 3 PLAY-CHANGE-OPEN mode aging (1 cycle)

CHANGE while PLAY 3


AGING MODE 3-c
ALL OPEN
ALL CLOSE
DISC 1 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 1 TOC READ
DISC 1 UNLOAD
ALL OPEN
WAIT 500ms
ALL CLOSE
DISC 5 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 5 TOC READ
DISC 5 UNLOAD
DISC 3 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 3 TOC READ
DISC 3 PLAY
DISC 3 PLAY ALL OPEN
WAIT 500ms
DISC 3 PLAY ALL CLOSE
DISC 3 STOP
DISC 3 UNLOAD
DISC 4 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 4 TOC READ
DISC 4 UNLOAD
DISC 2 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 2 TOC READ
DISC 2 UNLOAD
WAIT 500ms
To AGING MODE 3-d

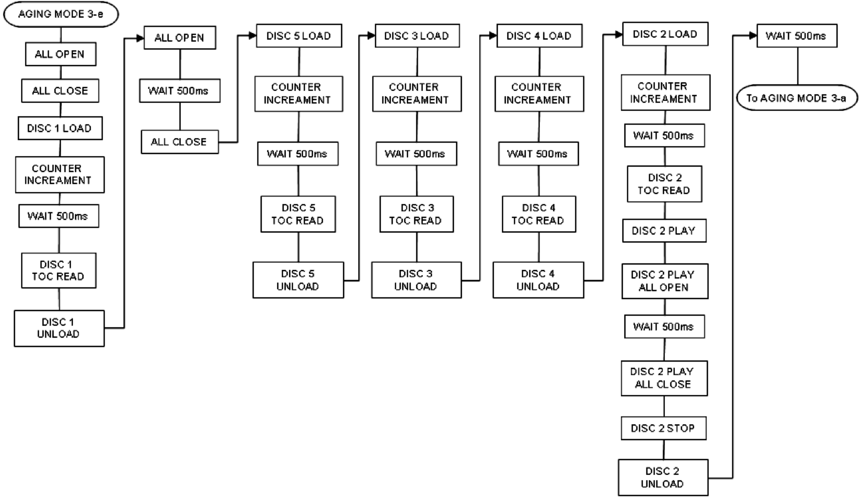
Mode 3 PLAY-CHANGE-OPEN mode aging (1 cycle)

CHANGE while PLAY 4


AGING MODE 3-d
ALL OPEN
ALL CLOSE
DISC 1 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 1 TOC READ
DISC 1 UNLOAD
ALL OPEN
WAIT 500ms
ALL CLOSE
DISC 5 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 5 TOC READ
DISC 5 UNLOAD
DISC 3 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 3 TOC READ
DISC 3 UNLOAD
DISC 4 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 4 TOC READ
DISC 4 PLAY
DISC 4 PLAY ALL OPEN
WAIT 500ms
DISC 4 PLAY ALL CLOSE
DISC 4 STOP
DISC 3 UNLOAD
DISC 2 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 2 TOC READ
DISC 2 UNLOAD
WAIT 500ms
To AGING MODE 3-e

Mode 3 PLAY-CHANGE-OPEN mode aging (1 cycle)

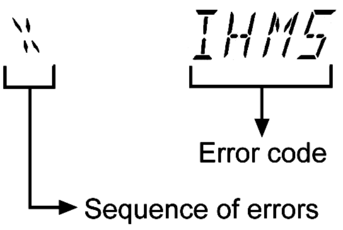
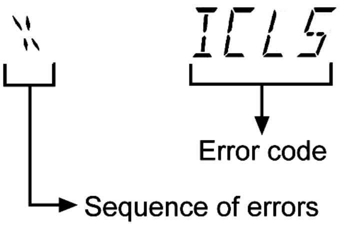
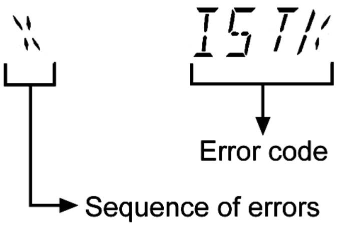
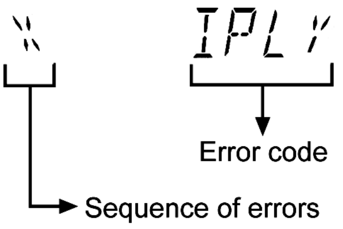
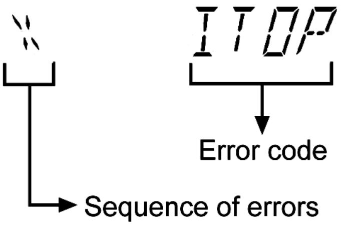
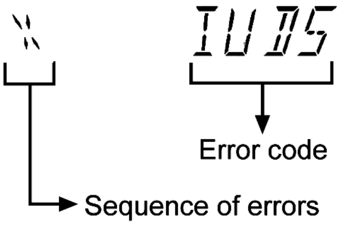
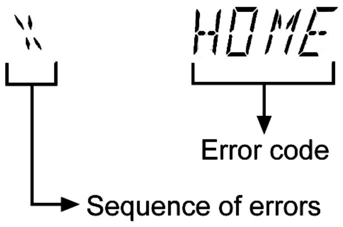
CHANGE while PLAY 2

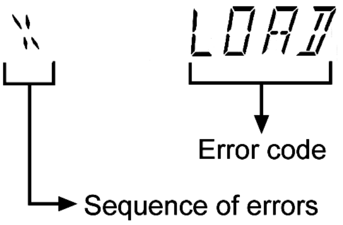
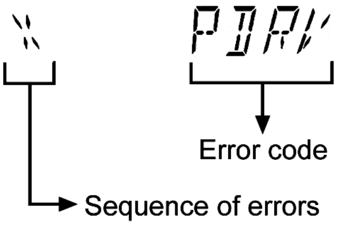
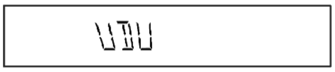
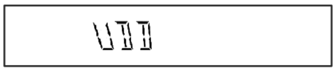
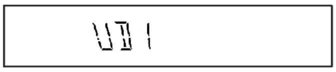
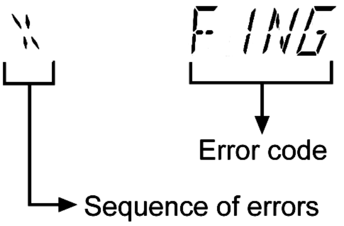
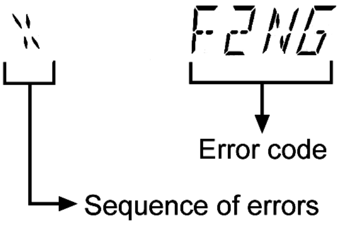
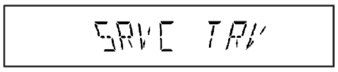
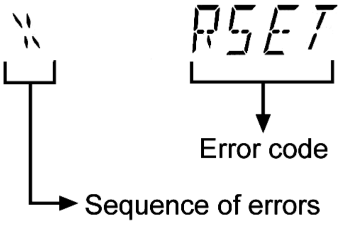

AGING MODE 3-e
ALL OPEN
ALL CLOSE
DISC 1 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 1 TOC READ
DISC 1 UNLOAD
ALL OPEN
WAIT 500ms
ALL CLOSE
DISC 5 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 5 TOC READ
DISC 5 UNLOAD
DISC 3 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 3 TOC READ
DISC 3 UNLOAD
DISC 4 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 4 TOC READ
DISC 4 UNLOAD
DISC 2 LOAD
COUNTER INCREAMENT
WAIT 500ms
DISC 2 TOC READ
DISC 2 PLAY
DISC 2 PLAY ALL OPEN
WAIT 500ms
DISC 2 PLAY ALL CLOSE
DISC 2 STOP
DISC 2 UNLOAD
WAIT 500ms
To AGING MODE 3-a

4.2. Error code Table

Self-Diagnosis Function (refer Section 4.1) provides information on any problems occuring for the unit and its respective components by displaying the error codes. These error code such as U**, H** and F** are stored in memory and held unless it is cleared.

The error code is automatically display after entering into self-diagnostic mode.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
IHMS	Cam gear abnormality	Cam gear does not rotate to “HOME” position.	 IHMS Error code Sequence of errors	For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
ICSL	Cam gear/gear units abnormal	Cam gear does not rotate to “PLAY” driving position and hence does not drive playing tray to “STOCK” position.	 ICLS Error code Sequence of errors	For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
ISTK	Drive rack/gear assembly abnormal	The tray drive rack does not move to “STOCK” position. (Tray does not move to “STOCK” position)	 ISTK Error code Sequence of errors	For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
IPLY	Drive rack/gear assembly abnormal	The tray drive rack does not move to “PLAY” position. (Tray does not move to “PLAY” position)	 IPLY Error code Sequence of errors	For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
ITOP	UD assembly	UD Rack does not move to front direction. This lead to UD base not raise to top position.	 ITOP Error code Sequence of errors	For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
IUDS	UD assembly	After TOP SW is detected, UD rack does not move into tray 1 position.	 IUDS Error code Sequence of errors	For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
HOME	Cam gear/gear assembly abnormal	Cam gear does not move to “HOME” position under following conditions 1. After tray is load to “PLAY” position. 2. After tray is unload to “STOCK” position.	 HOME Error code Sequence of errors	For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
LOAD	Tray drive assembly abnormal	Tray unit does not move from "STOCK" to "PLAY" position		For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
PDRV	Cam gear/gear assembly abnormal	Cam gear does not move from "HOME" to "PLAY" drive position.		For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
UDU	UD base asssembly abnormal	UD Base assembly does not move upwards from tray 5 to tray 2		For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
UDD	UD base asssembly abnormal	UD Base assembly does not move downwards from tray 1 to tray 5.		For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
UD1	UD base asssembly abnormal	UD Base assembly does not move to tray 1.		For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
F1NG	Fail - safe mode. (For open/close tray unit(s))	When the tray open operation is performed, it fails to open. It will automatically close all trays after the time-out by the microprocessor. During this time when it fails, the error code will appear.		For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
F2NG	Fail - safe mode. (For open/close tray unit(s))	When the tray close operation is performed, it fails to close. It will automatically open all trays after the time-out by the microprocessor. During this time when it fails, the error code will appear.		For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.
SRVC_TRV	To unlock the traverse unit for service	1. All trays set to "STOCK" position 2. Mechanism set to tray 5 3. Cam gear set to "HOME" position		For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit.
RSET	Cam gear jam/close sensor faulty	During tray re-open, the cam gear will rotate in the opposite direction to reset the cam gearposition. When it fails, the error code will appear.		For CD changer unit (CRS1). Press [SINGLE CHANGE] on main unit for next error.

CRS1 Error Code display

1. The errors that occured in CRS1 Mechanism can be recalled and displayed, in the order of the occurence under self-diagnostic (Refer to Section 4.1 for procedures to enter this mode.
   - · Only the first 5 errors will be memorized (in backup memory). The subsequence error shall be ignored and not memorize. For system with EEPROM as memory backup,memory space in EEPROM is neccesary.
2. To display all error code memorized

In CRS1 Self-Diagnostic mode, press [SINGLE CHANGE] to display subsequence error code.

It shall repeat after reaching error no. 5.

e.g.:

[1 _ _ _ _ I H M S] → [SINGLE CHANGE]
[2 _ _ _ _ I T O P] → [SINGLE CHANGE]
[3 _ _ _ _ H O M E] → [SINGLE CHANGE]
[4 _ _ _ _ L O A D] → [SINGLE CHANGE]
[5 _ _ _ _ _ U D D] → [SINGLE CHANGE]

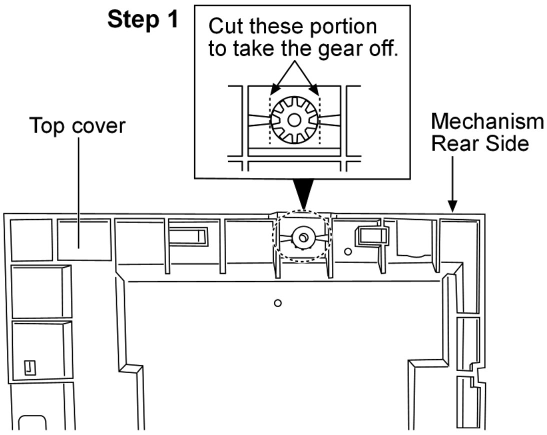
3. To clear the error code memory

   In CRS1 Self-Diagnostic mode, long press [SINGLE CHANGE] key (2s or more)

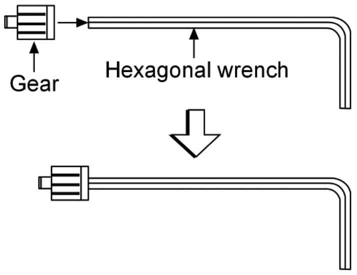
5 Troubleshooting Explorer

5.1. Preparation of service jig

- This unit has a gear which is used for checking items (open/close of disc tray, up/down operation of traverse unit by manually) when servicing. (For gear information, that is described on the items for disassembly procedures.)
- For preparation of gear (for servicing), perform the procedures as follows.
- In case of re-servicing the same set, the “gear for servicing” may be took off because it had been used. So, the “gear for servicing” must be stored.


Step 1
Cut these portion to take the gear off.
Top cover
Mechanism Rear Side

Step 2: Insert the gear into the hexagonal wrench.


Gear
Hexagonal wrench

(Preparation of gear as jig is completed)

5.2. Checking of Changer Unit

Below is the procedures for checking the function of the changer unit.

Step 1: Enter into doctor mode.

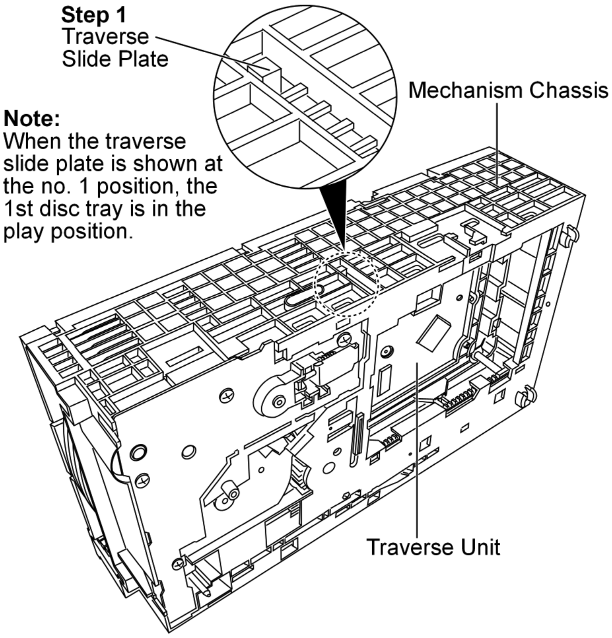
Step 2: Press [DISC] on remote control unit.

Step 3: Error code will appear if there is any function problems. (Pls refer to section 4.2 on more information of error code).

5.3. Setting the trays in "STOCK" position

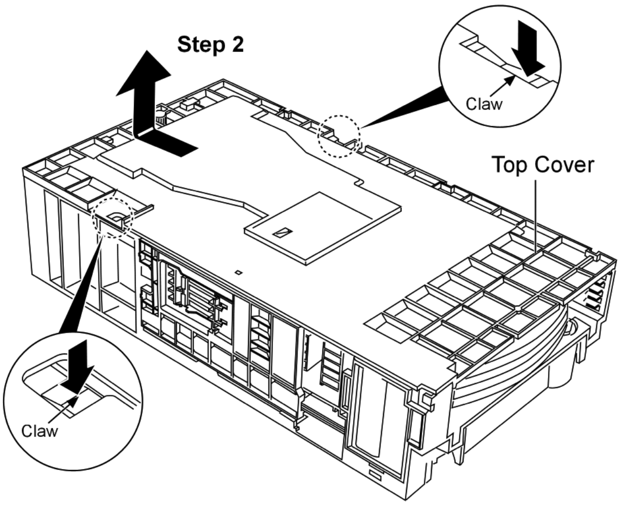
- Below is procedures for setting the main unit into service mode:-
  1. Enter into self-diagnostic (Refer to section 4.1)
  2. Press [SINGLE CHANGE] on main unit.
- If fail to set the main unit into service mode, do it manually by the below procedures

5.3.1. No CD in the tray


Step 1
Traverse Slide Plate
Mechanism Chassis
Traverse Unit

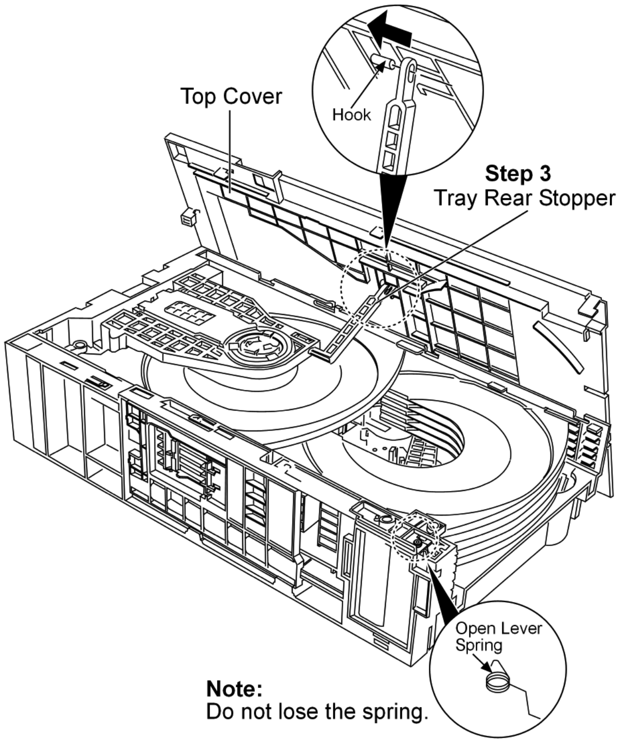
Note:
When the traverse slide plate is shown at the no. 1 position, the 1st disc tray is in the play position.

Step 1: Check any disc tray at the play position from the mechanism side.


Step 2
Claw
Top Cover
Claw

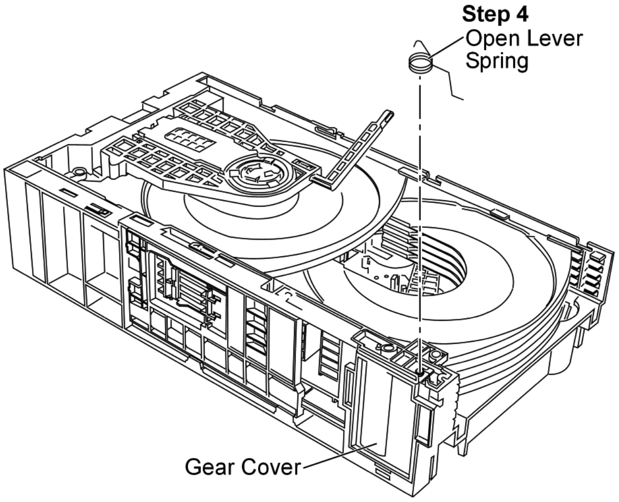
Step 2: Press the 2 claws and then lift up the top cover as arrows shown.

Caution: Do not exert strong force on the claws.

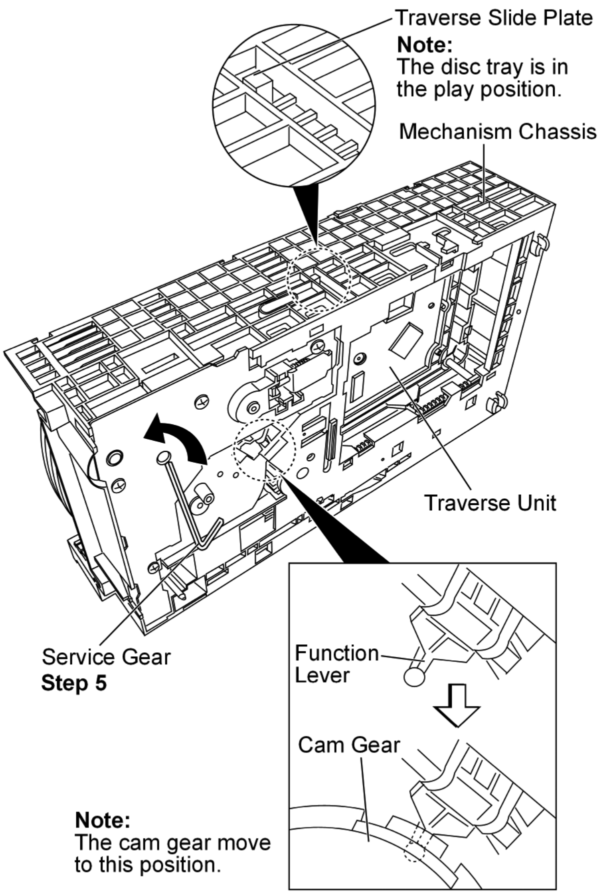

Top Cover
Hook
Step 3
Tray Rear Stopper
Open Lever Spring

Note:
Do not lose the spring.

Step 3: Release the top cover from the tray rear stopper as arrow shown and remove the top cover.


Step 4
Open Lever Spring
Gear Cover

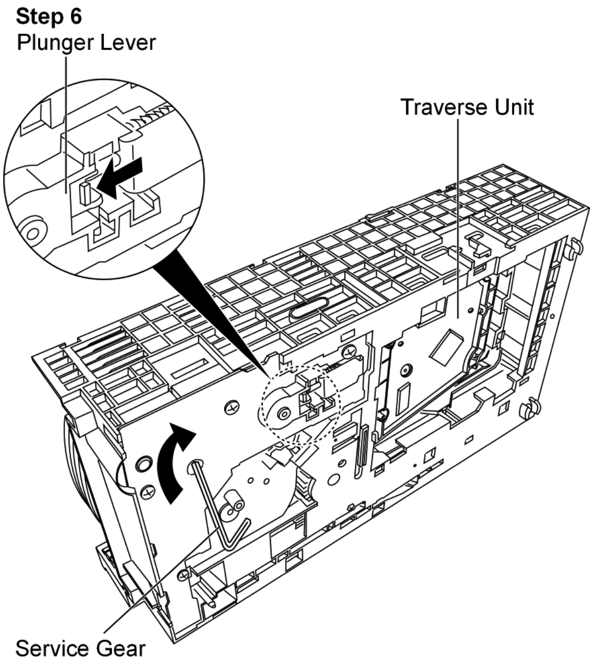
Step 4: Remove the open lever spring.


Traverse Slide Plate
Mechanism Chassis
Traverse Unit
Service Gear
Step 5
Function Lever
Cam Gear

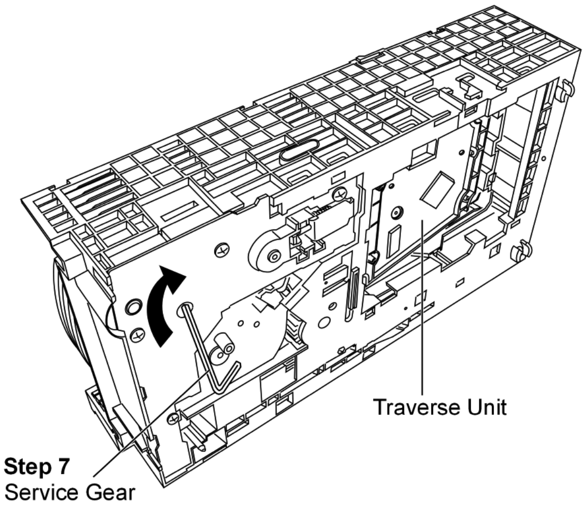
Note:
The disc tray is in the play position.

Note:
The cam gear move to this position.

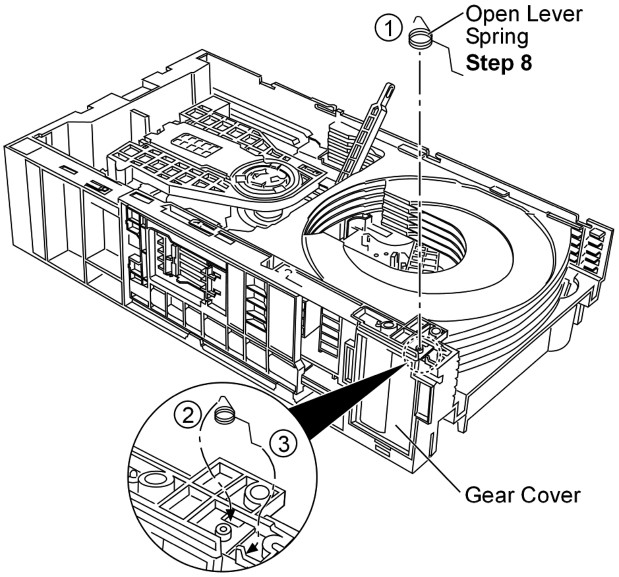
Step 5: Insert the service gear into the service hole and rotate the gear anti-clockwise.


Step 6
Plunger Lever
Traverse Unit
Service Gear

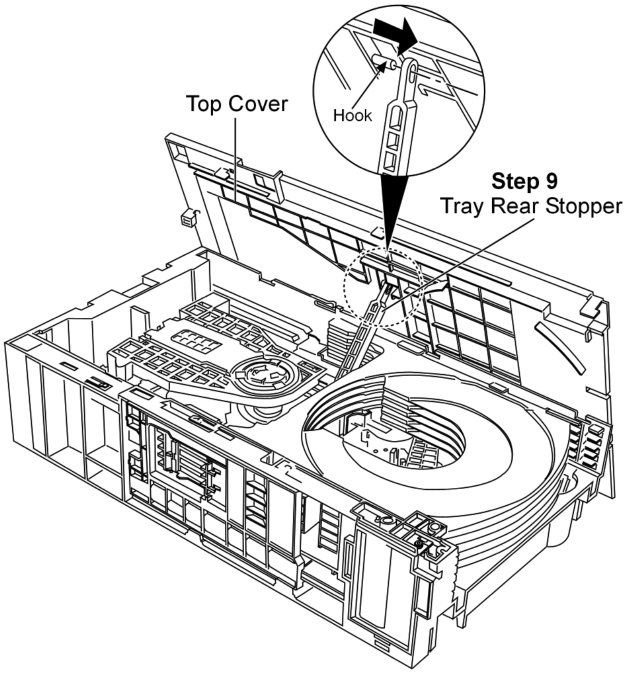
Step 6: Press and hold the plunger lever and rotate the gear clockwise until it stop.


Traverse Unit
Step 7
Service Gear

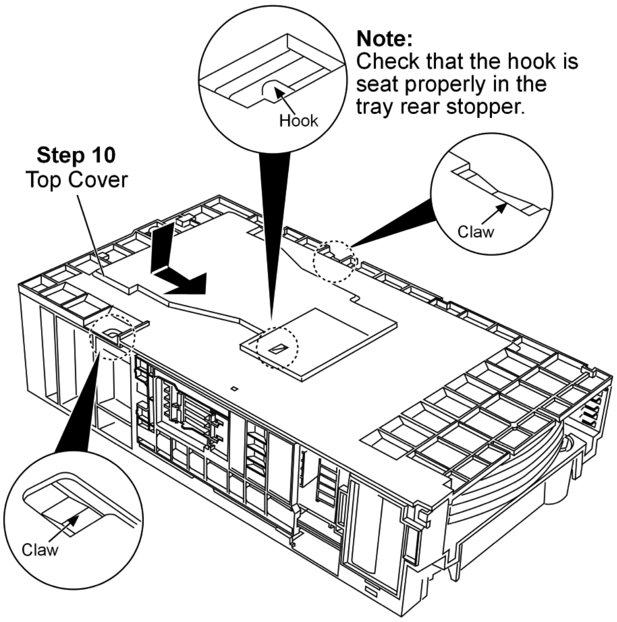
Step 7: Release the plunger lever, rotate the gear clockwise continuously until it stop at “HOME” position.


①
Open Lever Spring
Step 8
②
③
Gear Cover

Step 8: Install the open lever spring as shown.

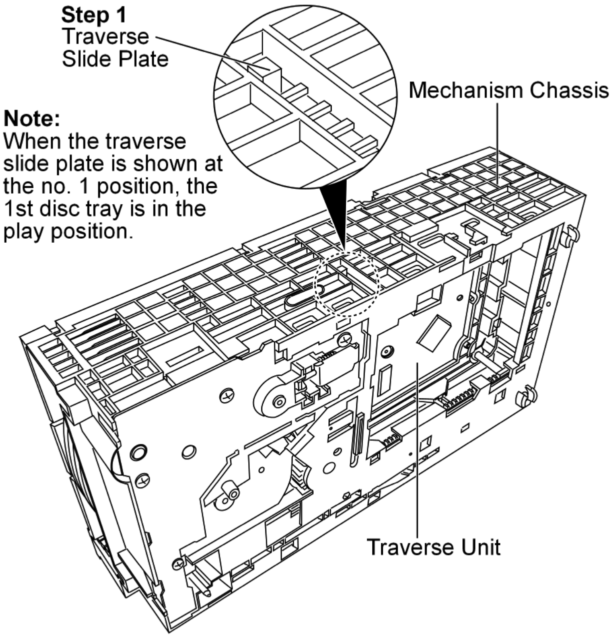

Top Cover
Hook
Step 9
Tray Rear Stopper

Step 9: Install the top cover, fix the top cover hook to the tray rear stopper as arrow shown.


Note:
Check that the hook is seat properly in the tray rear stopper.
Hook
Step 10
Top Cover
Claw
Claw

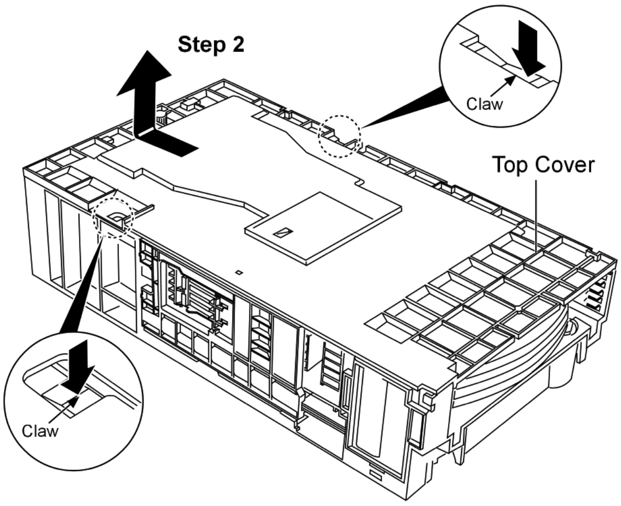
Step 10: Fix the top cover as arrow shown, the 2 claws should be latched.

5.3.2. When CD in the tray


Step 1
Traverse Slide Plate
Mechanism Chassis
Traverse Unit

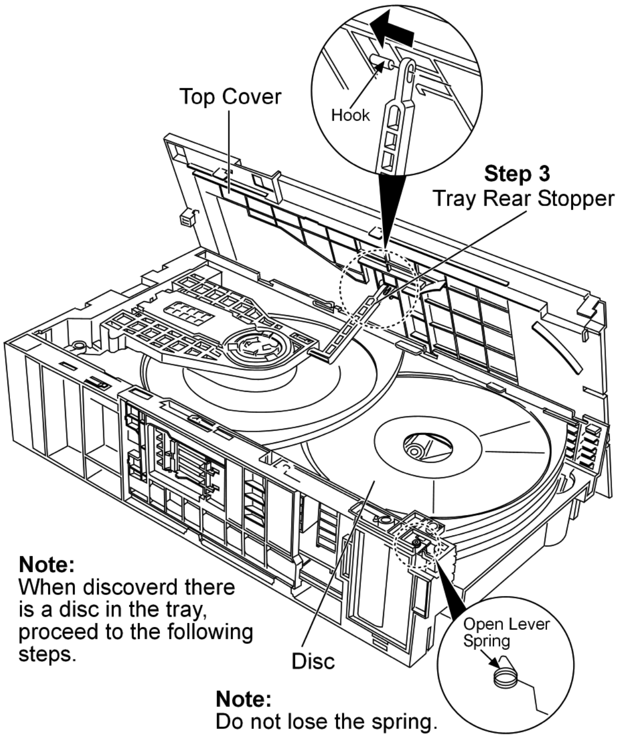
Note:
When the traverse slide plate is shown at the no. 1 position, the 1st disc tray is in the play position.

Step 1: Check any disc tray at the play position from the mechanism side.


Step 2
Claw
Top Cover
Claw

Step 2: Press the 2 claws and then lift up the top cover as arrows shown.

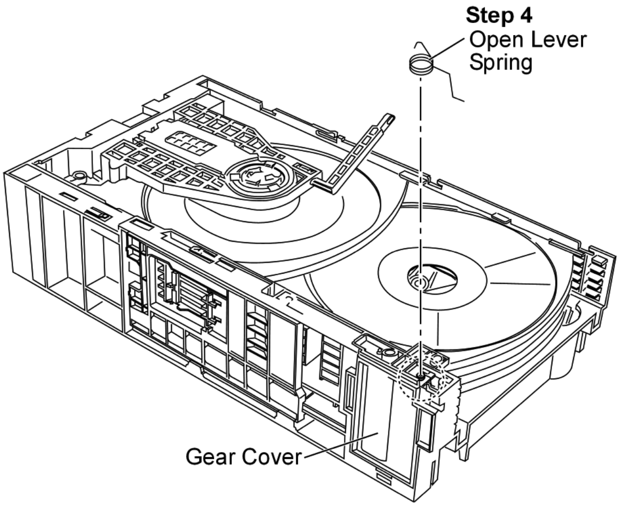
Caution: Do not exert strong force on the claws.


Top Cover
Hook
Step 3
Tray Rear Stopper
Disc
Open Lever Spring

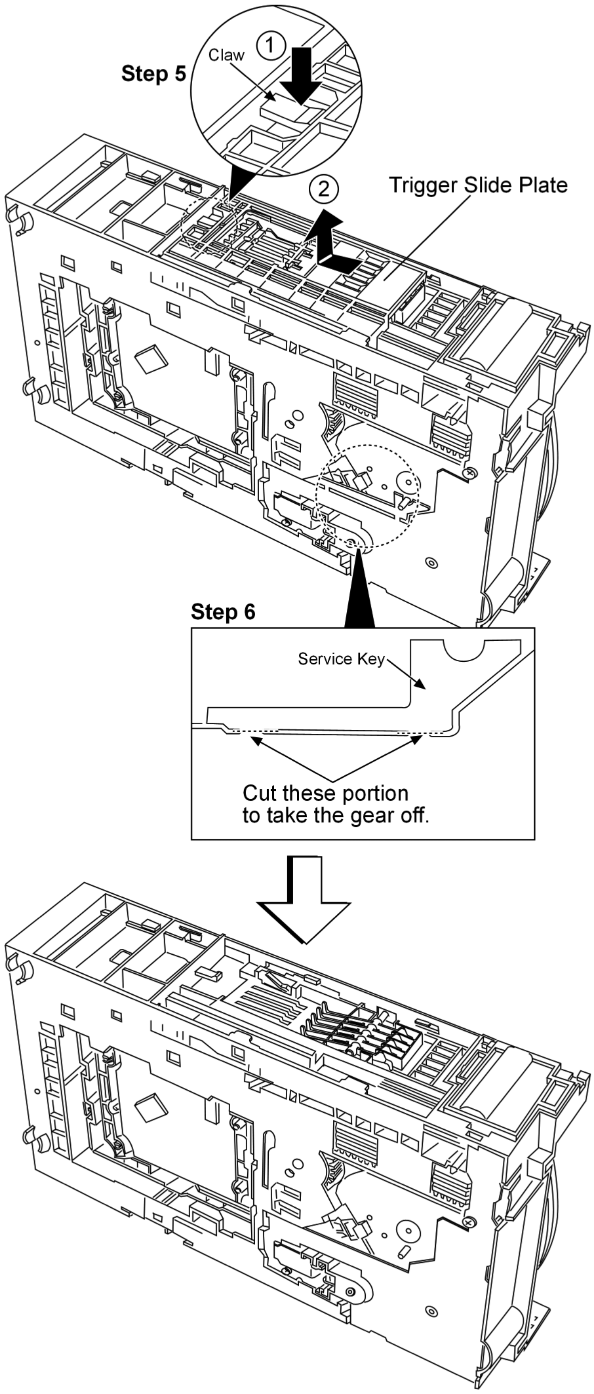
Note:
When discoverd there is a disc in the tray, proceed to the following steps.

Note:
Do not lose the spring.

Step 3: Release the top cover from the tray rear stopper as arrow shown and remove the top cover.

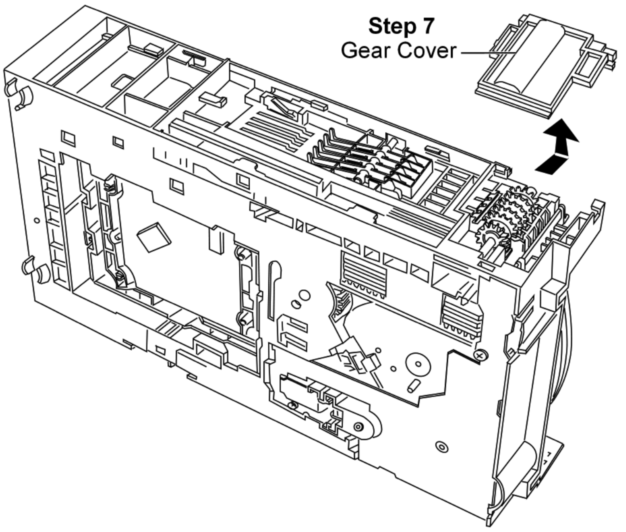

Step 4
Open Lever Spring
Gear Cover

Step 4: Remove the open lever spring.

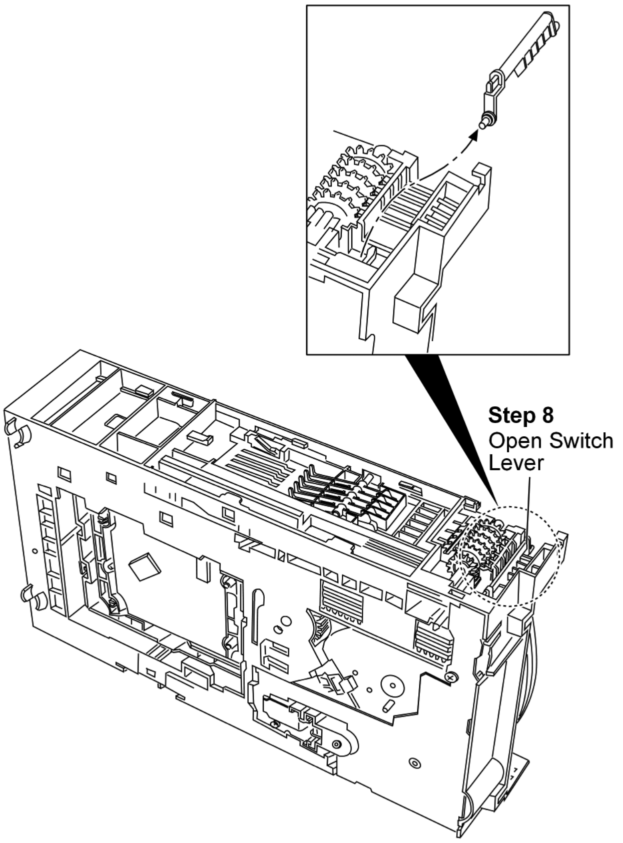

Step 5
Claw
①
②
Trigger Slide Plate
Step 6
Service Key
Cut these portion
to take the gear off.

Step 5: Press the claw, push backwards and remove the trigger slide plate as arrows shown.

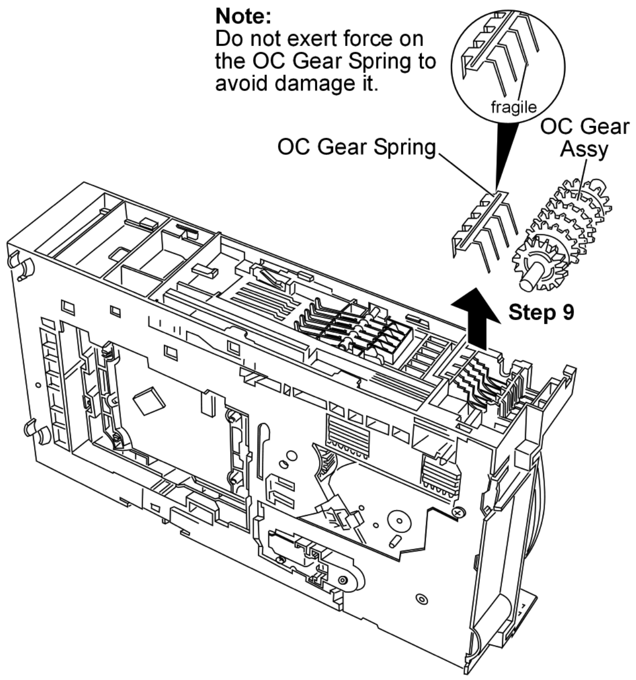
Step 6: Prepare the service key for use.


Step 7
Gear Cover

Step 7: Push forward and remove the gear cover as arrow shown.


Step 8
Open Switch
Lever

Step 8: Remove the open switch lever.

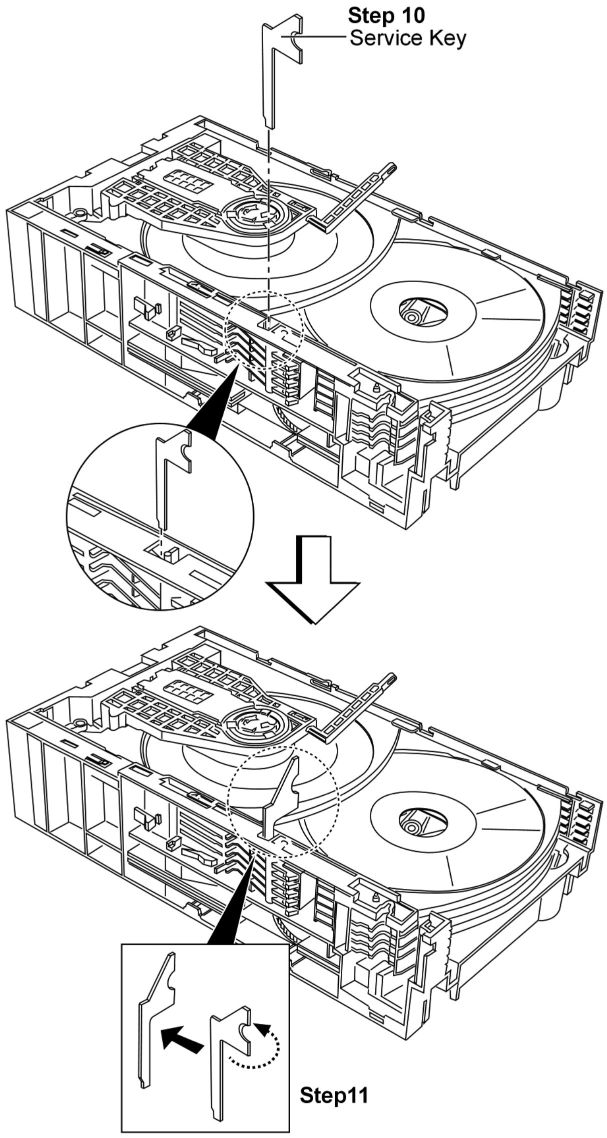


Note:
Do not exert force on the OC Gear Spring to avoid damage it.

fragile
OC Gear Spring
OC Gear Assy
Step 9

Step 9: Remove the OC gear assy followed by the OC gear spring as arrow shown.

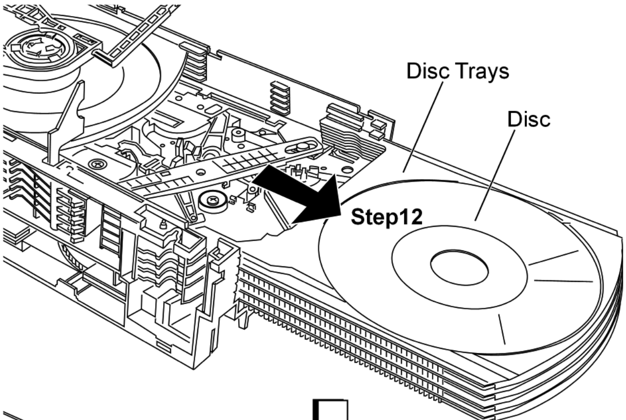
Caution: Ensure the OC gear assy and OC gear spring are handle properly and keep them in a safe place.

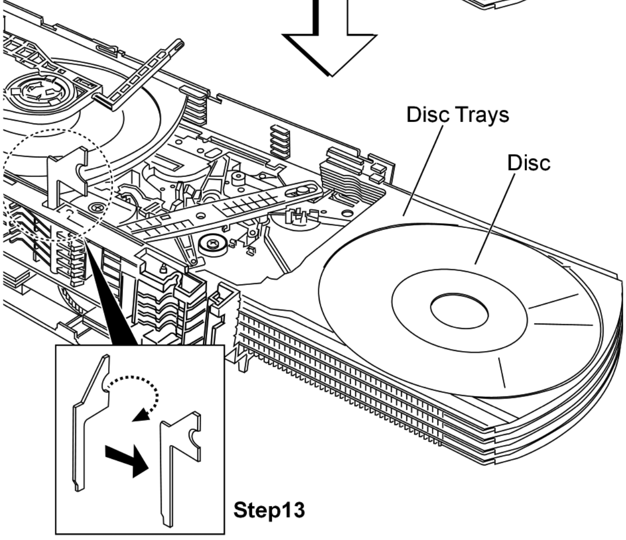


Step 10
Service Key
Step11

Step 10: Insert the service key into the hole.

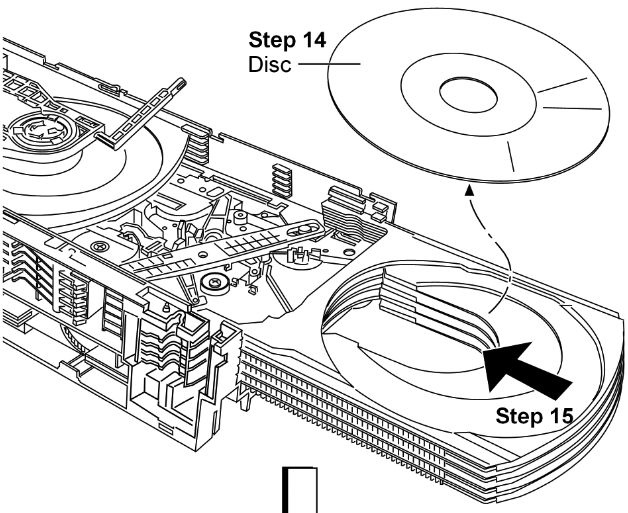
Step 11: Turn the service key to release the tray lock lever.

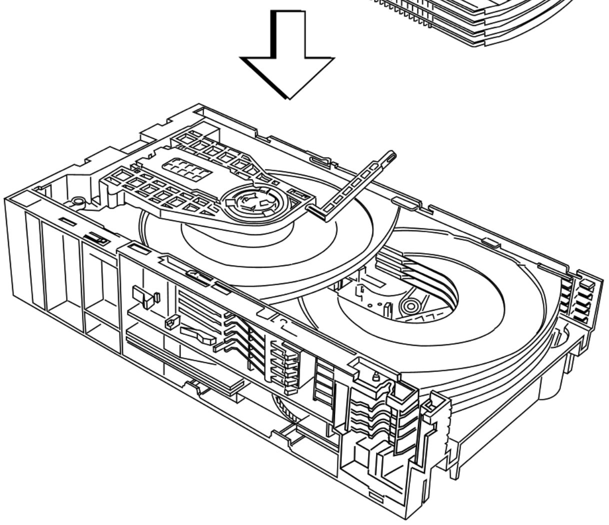

Disc Trays
Disc
Step12


Disc Trays
Disc
Step13

Step 12: Push the disc trays towards the front as arrow shown.

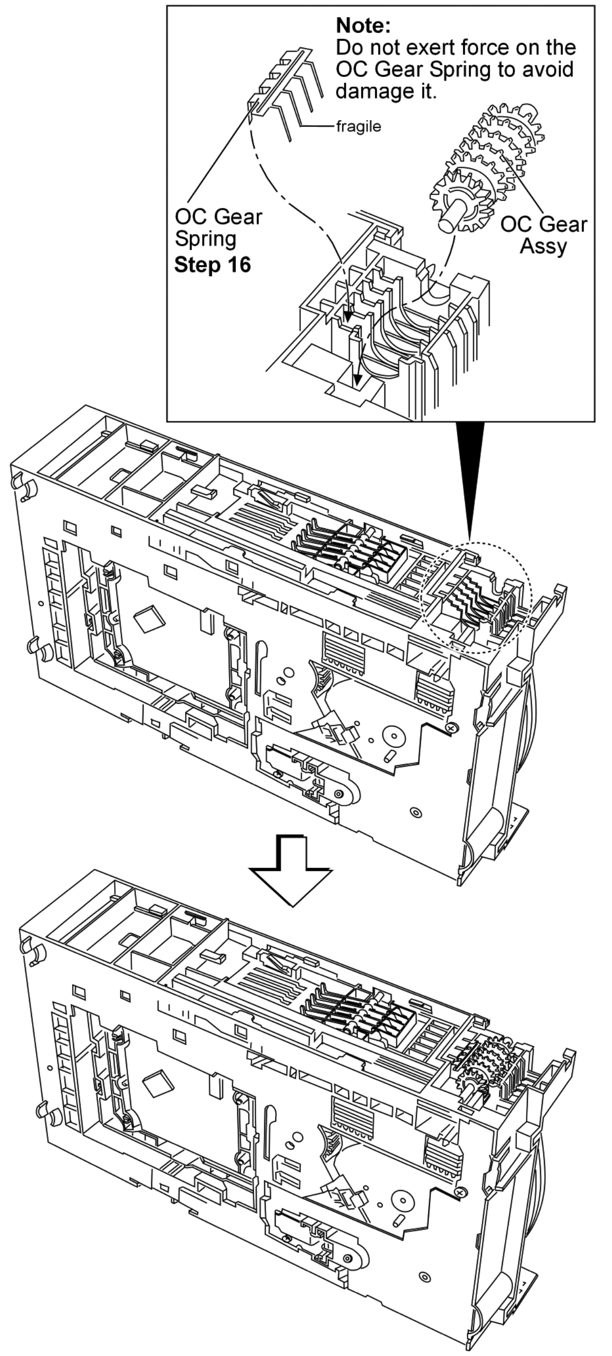
Step 13: Turn the service key back to its original position and remove it.


Step 14
Disc
Step 15

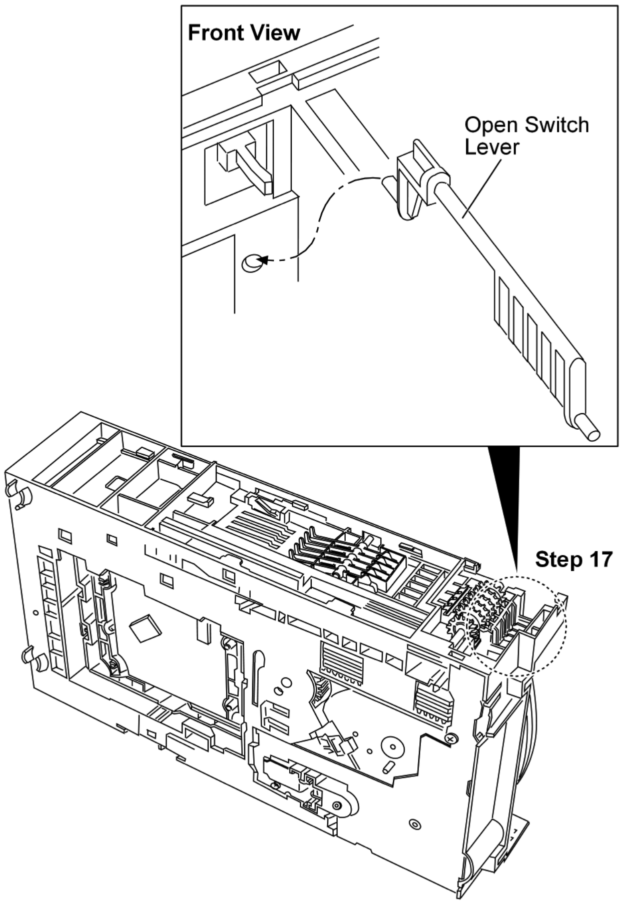


Step 14: Remove the disc.

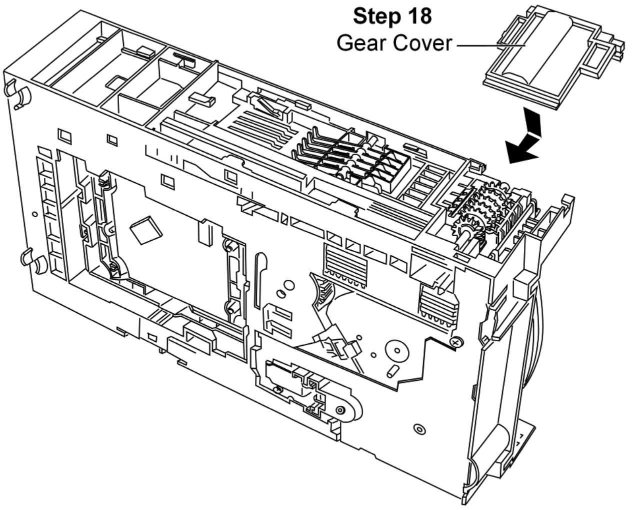
Step 15: Push the disc trays back to the unit as arrow shown.


Note:
Do not exert force on the OC Gear Spring to avoid damage it.
fragile
OC Gear Spring
Step 16
OC Gear Assy

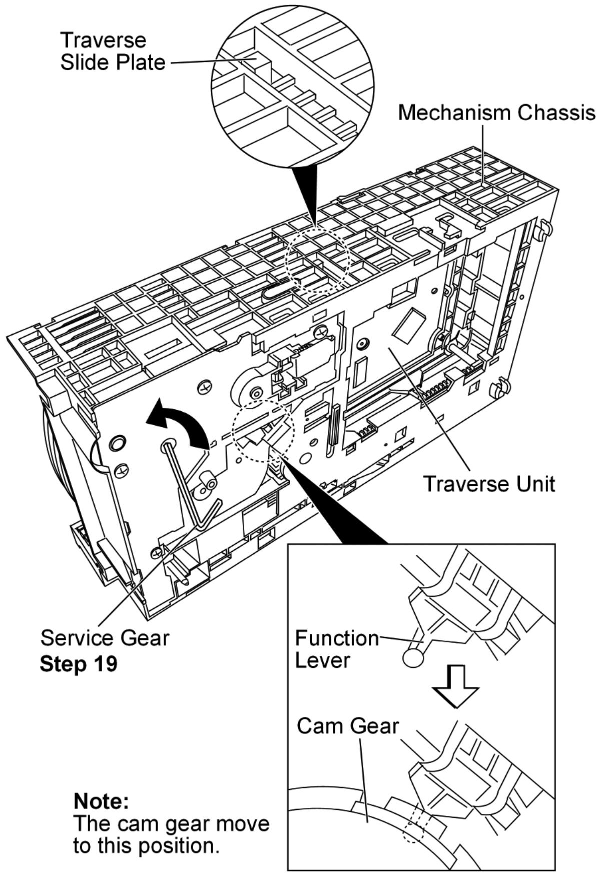
Step 16: Install the OC gear assy followed by the OC gear spring.


Front View
Open Switch Lever
Step 17

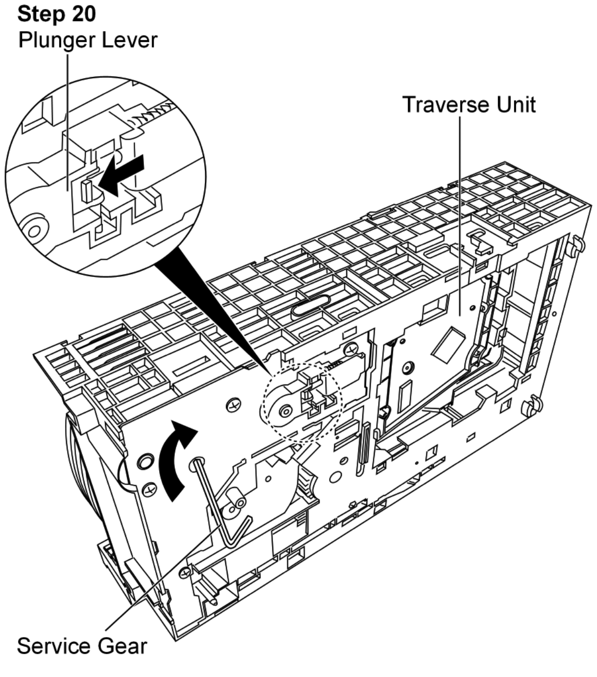
Step 17: Install the open switch lever.


Step 18
Gear Cover

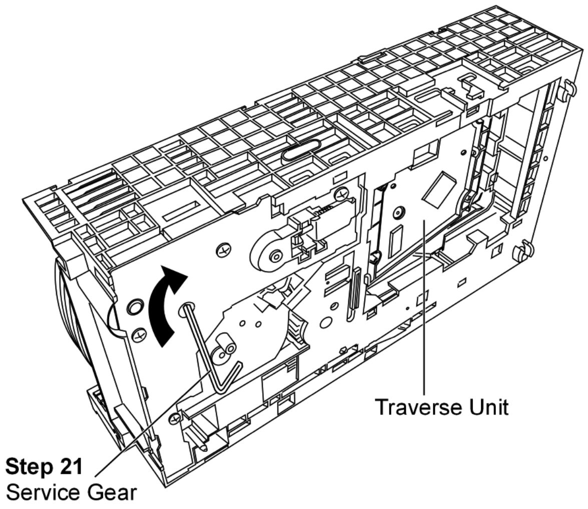
Step 18: Install the gear cover as arrow shown.


Traverse Slide Plate
Mechanism Chassis
Traverse Unit
Service Gear
Step 19
Function Lever
Cam Gear
Note:
The cam gear move to this position.

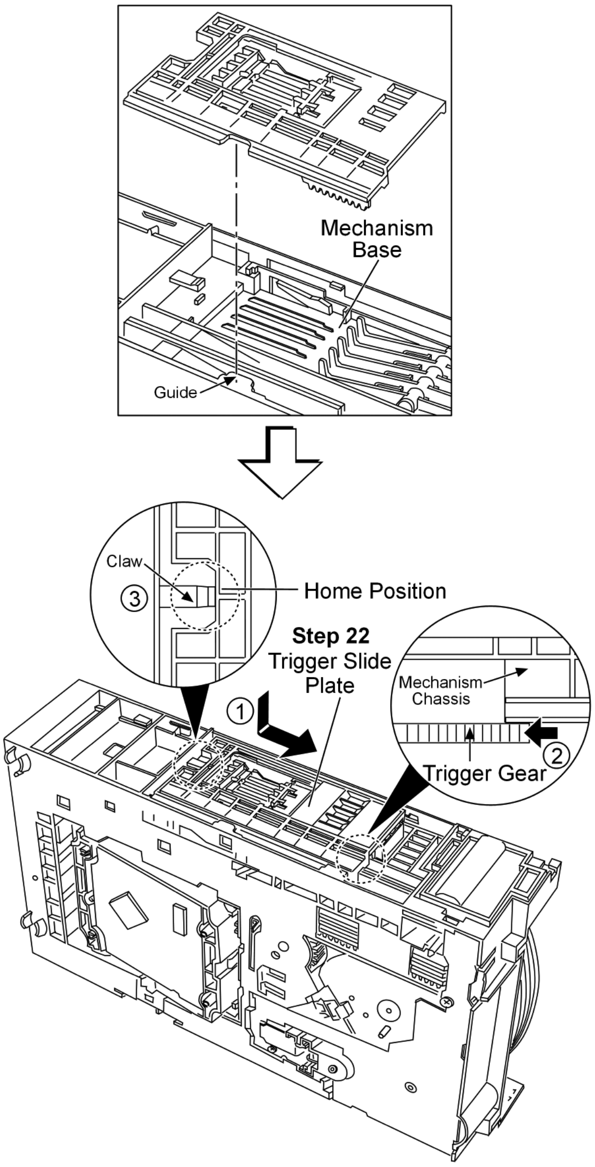
Step 19: Insert the service gear into the service hole and rotate the gear anti-clockwise.


Step 20
Plunger Lever
Traverse Unit
Service Gear

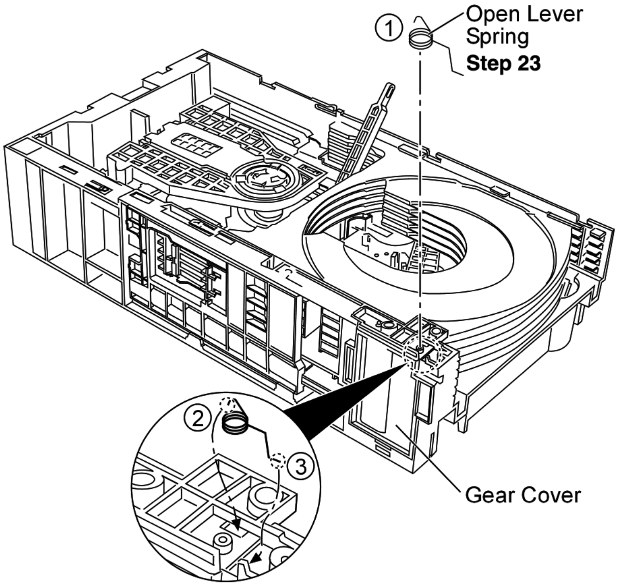
Step 20: Press and hold the plunger lever and rotate the gear clockwise until it stop.


Traverse Unit
Step 21
Service Gear

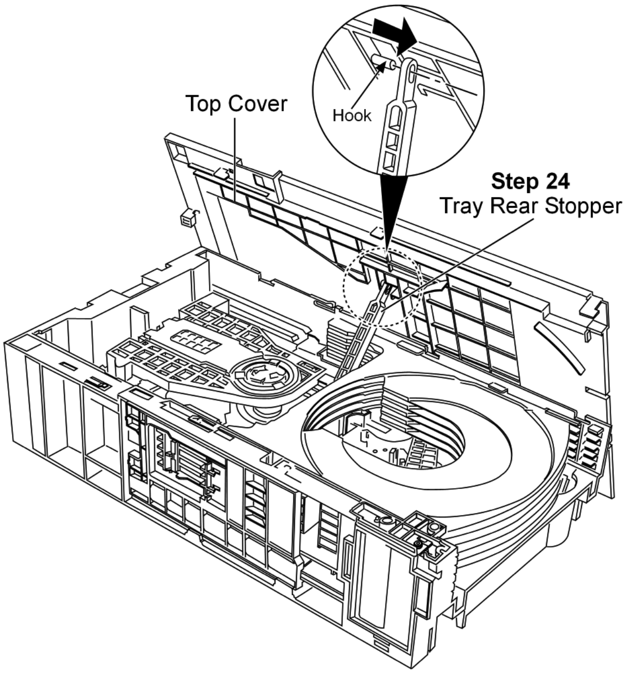
Step 21: Release the plunger lever, rotate the gear clockwise continuously until it stop at “HOME” position.


Mechanism Base
Guide
Claw
③
Home Position
Step 22
Trigger Slide Plate
①
Mechanism Chassis
②
Trigger Gear

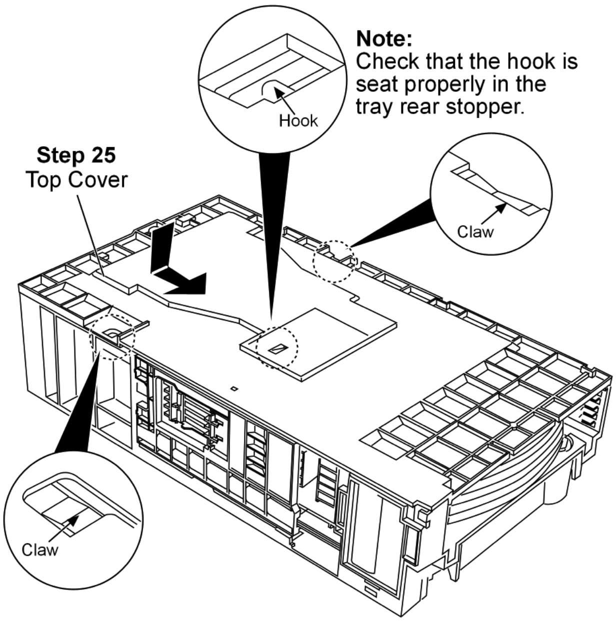
Step 22: Install the trigger slide plate as arrows shown in sequence.


①
Open Lever Spring
Step 23
②
③
Gear Cover

Step 23: Install the open lever spring as shown.


Top Cover
Hook
Step 24
Tray Rear Stopper

Step 24: Install the top cover, fix the top cover hook to the tray rear stopper as arrow shown.

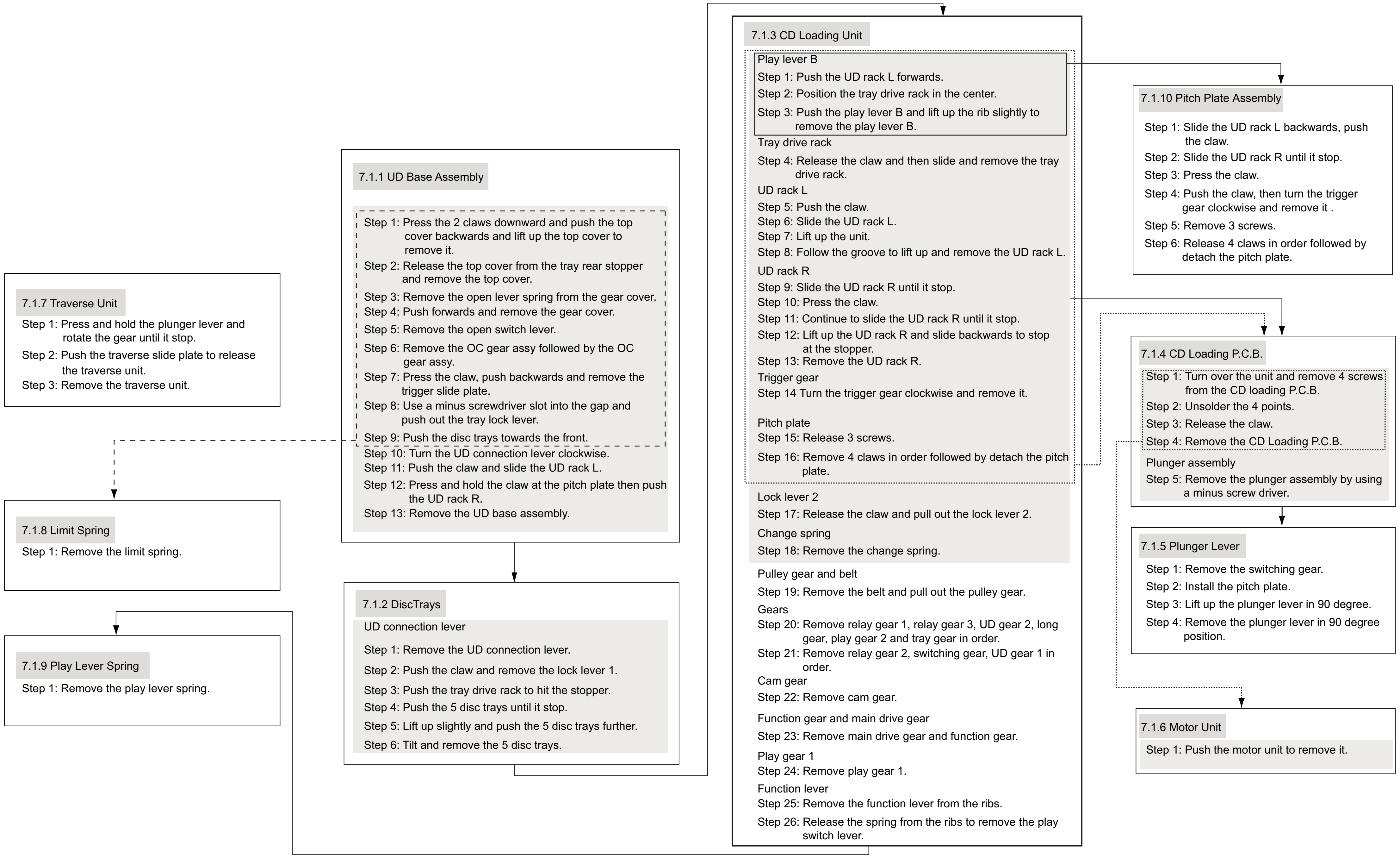

Note:
Check that the hook is seat properly in the tray rear stopper.
Hook
Step 25
Top Cover
Claw
Claw

Step 25: Fix the top cover as arrow shown, the 2 claws should be latched.

6 Flow Chart

6.1. Disassembly Flow Chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.



7.1.1 UD Base Assembly

Step 1: Press the 2 claws downward and push the top cover backwards and lift up the top cover to remove it.
Step 2: Release the top cover from the tray rear stopper and remove the top cover.
Step 3: Remove the open lever spring from the gear cover.
Step 4: Push forwards and remove the gear cover.
Step 5: Remove the open switch lever.
Step 6: Remove the OC gear assy followed by the OC gear assy.
Step 7: Press the claw, push backwards and remove the trigger slide plate.
Step 8: Use a minus screwdriver slot into the gap and push out the tray lock lever.
Step 9: Push the disc trays towards the front.
Step 10: Turn the UD connection lever clockwise.
Step 11: Push the claw and slide the UD rack L.
Step 12: Press and hold the claw at the pitch plate then push the UD rack R.
Step 13: Remove the UD base assembly.

7.1.2 DiscTrays

UD connection lever
Step 1: Remove the UD connection lever.
Step 2: Push the claw and remove the lock lever 1.
Step 3: Push the tray drive rack to hit the stopper.
Step 4: Push the 5 disc trays until it stop.
Step 5: Lift up slightly and push the 5 disc trays further.
Step 6: Tilt and remove the 5 disc trays.

7.1.3 CD Loading Unit

Play lever B
Step 1: Push the UD rack L forwards.
Step 2: Position the tray drive rack in the center.
Step 3: Push the play lever B and lift up the rib slightly to remove the play lever B.
Tray drive rack
Step 4: Release the claw and then slide and remove the tray drive rack.
UD rack L
Step 5: Push the claw.
Step 6: Slide the UD rack L.
Step 7: Lift up the unit.
Step 8: Follow the groove to lift up and remove the UD rack L.
UD rack R
Step 9: Slide the UD rack R until it stop.
Step 10: Press the claw.
Step 11: Continue to slide the UD rack R until it stop.
Step 12: Lift up the UD rack R and slide backwards to stop at the stopper.
Step 13: Remove the UD rack R.
Trigger gear
Step 14 Turn the trigger gear clockwise and remove it.

Pitch plate
Step 15: Release 3 screws.
Step 16: Remove 4 claws in order followed by detach the pitch plate.
Lock lever 2
Step 17: Release the claw and pull out the lock lever 2.
Change spring
Step 18: Remove the change spring.
Pulley gear and belt
Step 19: Remove the belt and pull out the pulley gear.
Gears
Step 20: Remove relay gear 1, relay gear 3, UD gear 2, long gear, play gear 2 and tray gear in order.
Step 21: Remove relay gear 2, switching gear, UD gear 1 in order.
Cam gear
Step 22: Remove cam gear.
Function gear and main drive gear
Step 23: Remove main drive gear and function gear.
Play gear 1
Step 24: Remove play gear 1.
Function lever
Step 25: Remove the function lever from the ribs.
Step 26: Release the spring from the ribs to remove the play switch lever.

7.1.4 CD Loading P.C.B.

Step 1: Turn over the unit and remove 4 screws from the CD loading P.C.B.
Step 2: Unsolder the 4 points.
Step 3: Release the claw.
Step 4: Remove the CD Loading P.C.B.
Plunger assembly
Step 5: Remove the plunger assembly by using a minus screw driver.

7.1.5 Plunger Lever

Step 1: Remove the switching gear.
Step 2: Install the pitch plate.
Step 3: Lift up the plunger lever in 90 degree.
Step 4: Remove the plunger lever in 90 degree position.

7.1.6 Motor Unit

Step 1: Push the motor unit to remove it.

7.1.7 Traverse Unit

Step 1: Press and hold the plunger lever and rotate the gear until it stop.
Step 2: Push the traverse slide plate to release the traverse unit.
Step 3: Remove the traverse unit.

7.1.8 Limit Spring

Step 1: Remove the limit spring.

7.1.9 Play Lever Spring

Step 1: Remove the play lever spring.

7.1.10 Pitch Plate Assembly

Step 1: Slide the UD rack L backwards, push the claw.
Step 2: Slide the UD rack R until it stop.
Step 3: Press the claw.
Step 4: Push the claw, then turn the trigger gear clockwise and remove it .
Step 5: Remove 3 screws.
Step 6: Release 4 claws in order followed by detach the pitch plate.

6.2. Assembly Flow Chart

The following chart is the procedure for assembling the casing and inside parts for internal inspection when carrying out the servicing.

7.2.1 CD Loading Unit

Plunger lever
Step 1: Turn over the unit and install the plunger lever in 90 degree position.
Step 2: Push in the plunger lever.
Step 3: Turn over the unit and install the motor unit properly.

Plunger assembly
Step 4: Install the plunger assembly.

CD loading P.C.B.
Step 5: Install the CD Loading P.C.B.
Step 6: The claws should be latched.
Step 7: Solder the 4 points.
Step 8: Fix it with 4 screws.

Play switch lever
Step 9: Install the play switch lever.
Step 10: Fix the spring below the rib.

Function lever
Step 11: Install the the function lever.

Play gear 1
Step 12: Install the play gear 1.

Function gear and main drive gear
Step 13: Install the main drive gear.
Step 14: Install the function gear.

Gears
Step 15: Install the relay gear 2, switching gear and UD gear 1 respectively.
Step 16: Install the cam gear.Make sure the big hole is fix at the position (A) at 90 degree.
Step 17: Turn the cam gear anti-clockwise until the big hole stop at position (B).
Step 18: Install the relay gear 1, relay gear 3, UD gear 2, long gear and play gear 2 respectively.
Step 19: Install the tray relay gear.

Pulley gear and belt
Step 20: Install the pulley gear followed by the belt.

Change spring
Step 21: Install the change spring.

Pitch plate
Step 22: Install the lock lever 2 in sequence.
Step 23: Install the pitch plate.
Step 24: The 4 claws should be latched properly.
Step 25: Fix it with 3 screws.

Trigger gear
Step 26: Install the trigger gear in sequence.
Step 27: Use the screwdriver to turn the hole on the UD gear 2 align with the pitch plate hole.

UD rack R
Step 28: Insert the UD rack R.
Step 29: Push the UD rack R.

UD rack L
Step 30: Insert the UD rack L.
Step 31: Push the claw.
Step 32: Pull the UD rack L.

Tray drive rack
Step 33: Install the tray drive rack.

Play lever B
Step 34: Install the play lever B below the rib.

7.2.2 Disc Trays

Step 1: Tilt and fix the 5 disc trays.
Step 2: Push the 5 disc trays until it stop.
Step 3: Push the tray drive rack until it stop.

Lock lever 1
Step 4: Fix the lock lever 1 onto the pitch plate.
Step 5: Press and hold the claw at the pitch plate then push the UD rack R.
Step 6: Push the claw and slide the UD rack L.

UD connection lever
Step 7: Install the UD connection lever.

7.2.3 UD Base Assembly

Step 1: Push the traverse slide plate.
Step 2: Install the UD base assembly.
Step 3: Turn UD connection lever anti-clockwise, the UD base assembly will move downwards.
Step 4: Install the tray lock lever to the mechanism base and push the tray lock lever with a hand to fix it.
Step 5: Push the disc trays back to the unit.

Trigger Slide Plate
Step 6: Install the trigger slide plate, push forwards and push the trigger until locked by the claw.
Step 7: Install the OC gear spring followed by the OC gear assy.
Step 8: Install the open switch lever.
Step 9: Install the gear cover.
Step 10: Install the open lever spring.
Step 11: Install the top cover, fix the top cover hook to the tray rear stopper.
Step 12: Fixed the top cover, the 2 claws should be latched.

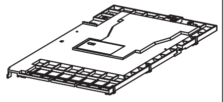
7.2.5 Traverse Unit

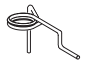
Step 1: Turn over the unit and install traverse unit.
Step 2: Push the traverse slide plate to lock the traverse unit.

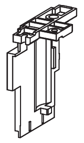
7.2.4 CD Loading P.C.B

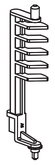
Step 1: Install the plunger assembly.
Step 2: Install the CD Loading P.C.B.
Step 3: The claw should be latched.
Step 4: Fix it with 4 screws.
Step 5: Solder the 4 points.

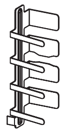
6.3. Disassembly Flow

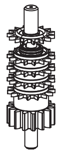

1. Top Cover

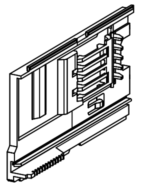

2. Open Lever Spring

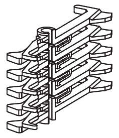

3. Gear Cover

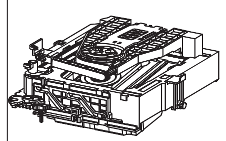

4. Open Switch Lever

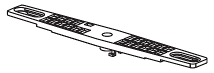

5. OC Gear Spring

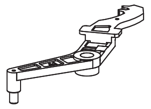

6. OC Gear Assy

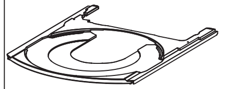

7. Trigger Slide Plate

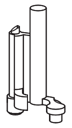

8. Tray Lock Lever

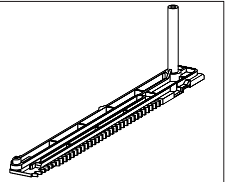

9. UD Base Assy

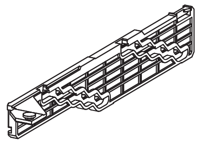

10. UD Connection Lever

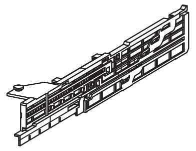

11. Lock Lever 1

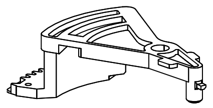

12. Tray

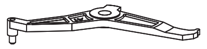

13. Play Lever B

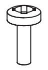

14. Tray Drive Rack

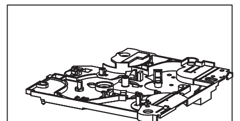

15. UD Rack L

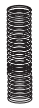

16.UD Rack R

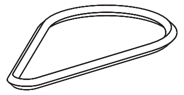

17. Trigger Gear

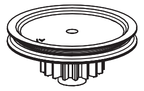

18. Lock Lever 2

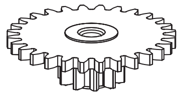

19. Screw

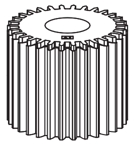

20. Pitch Plate

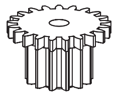

21. Change Spring

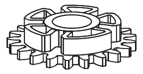

22. Belt

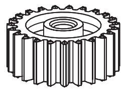

23. Pulley Gear

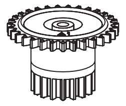

24. Tray Relay Gear

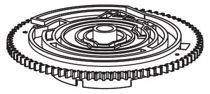

25. Play Gear 2

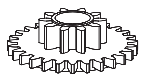

26. Long Gear

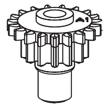

27 UD Gear 2

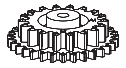

28. Relay Gear 3

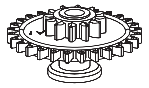

29. Relay Gear 1

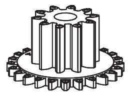

30. Cam Gear

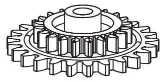

31. UD Gear 1

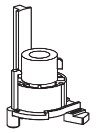

32. Switching Gear

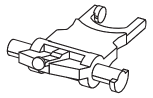

33. Relay Gear 2

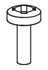

34. Function Gear

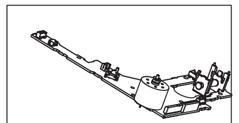

35. Main Drive Gear

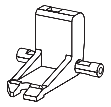

36. Play Gear 1

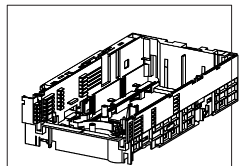

37. Play Switch Lever

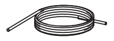

38. Function Lever

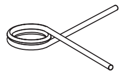

39. Screw


40. CD Loading PCB


41. Plunger Lever


42. Mech Base


43. Play Lever Spring


44. Limit Spring

7 Assembling and Disassembling Procedure.

7.1. Disassembling Procedures

Caution:

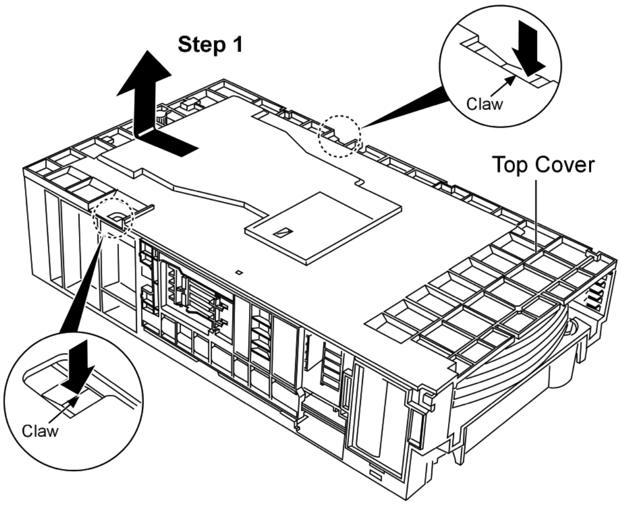
Do ensure that the main unit is set to service mode before repair.

For information on setting to service mode for changer unit, pls refer to section 5.3.

Note:

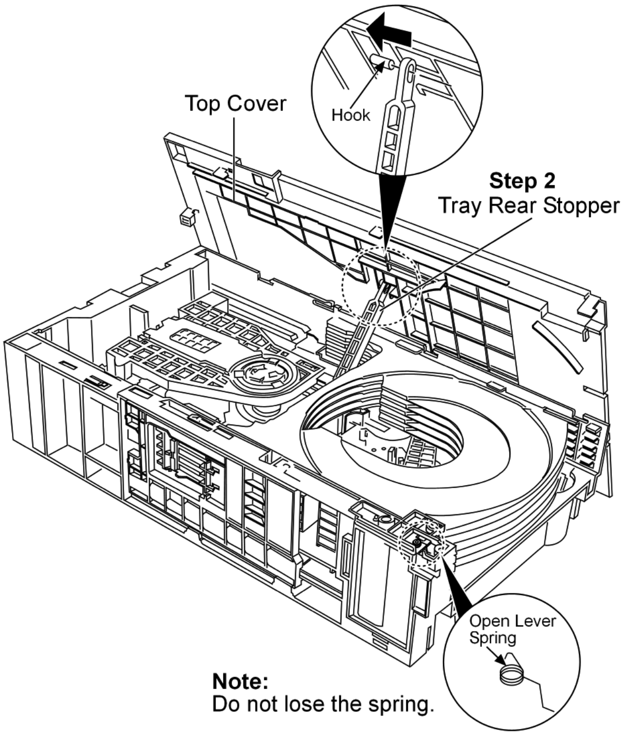
Change unit (CRS1) reliability test must be carry out in complete unit or using the Service P.C.B (Refer section 8).

7.1.1. Disassembly of UD Base Assembly

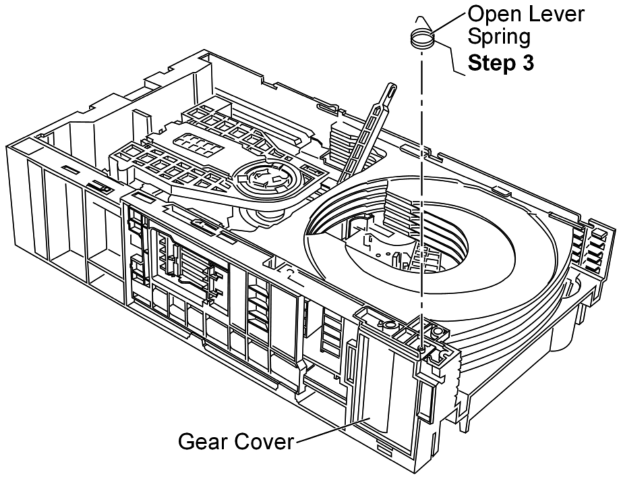

Step 1
Claw
Top Cover
Claw

Step 1: Press the 2 claws downwards and push the top cover backwards and lift up the top cover to remove it.

Caution: Do not exert strong force on the claws when pressing the claws.

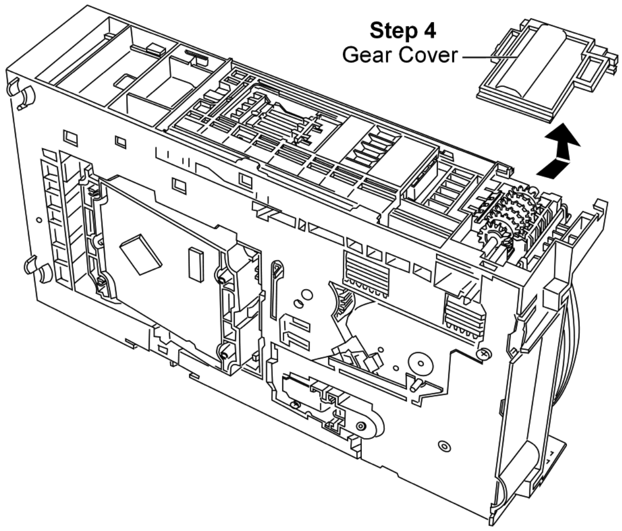

Top Cover
Hook
Step 2
Tray Rear Stopper
Open Lever Spring
Note:
Do not lose the spring.

Step 2: Release the top cover from the tray rear stopper as arrow shown and remove the top cover.

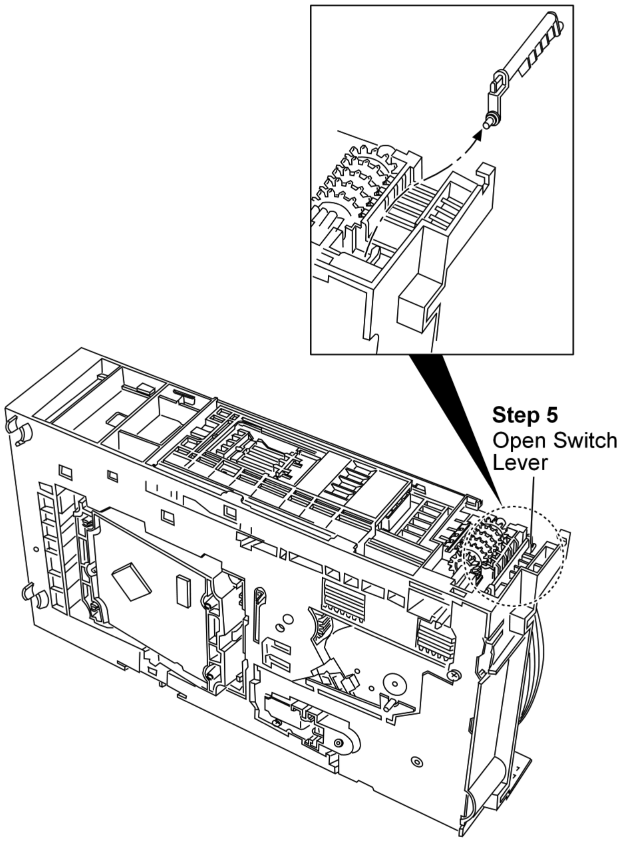

Open Lever Spring
Step 3
Gear Cover

Step 3: Remove the open lever spring from the gear cover.

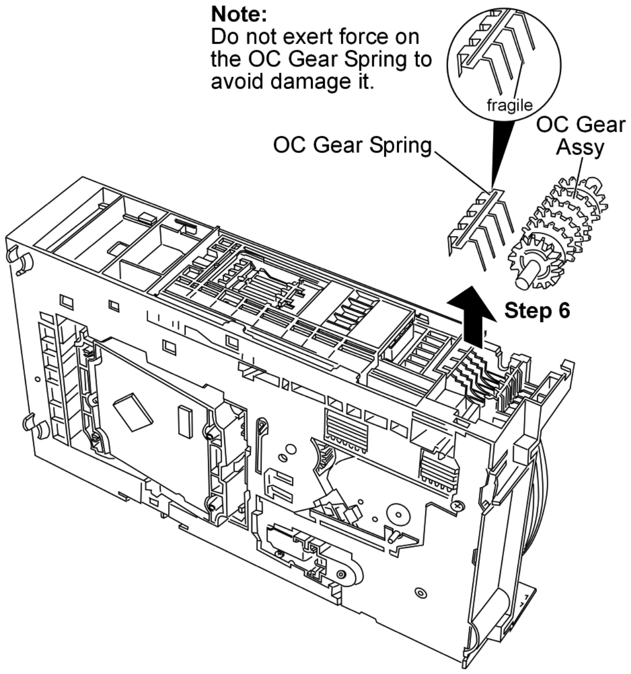
Caution: Ensure the open lever spring is handle properly and keep it in a safe place.


Step 4
Gear Cover

Step 4: Push forwards and remove the gear cover as arrow shown.

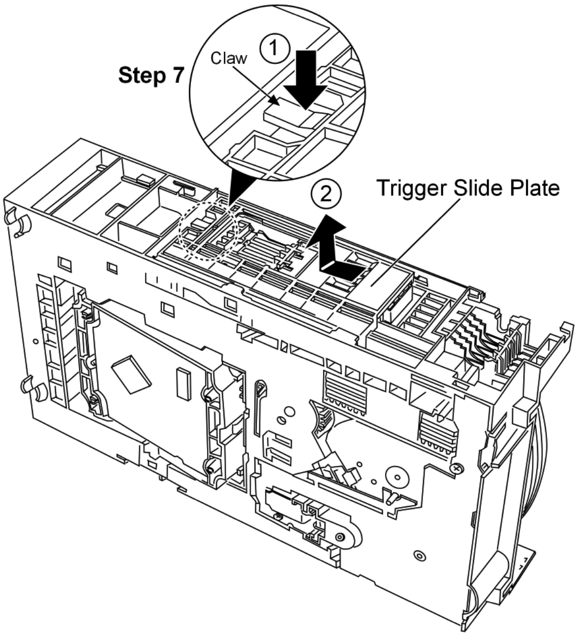

Step 5
Open Switch Lever

Step 5: Remove the open switch lever.

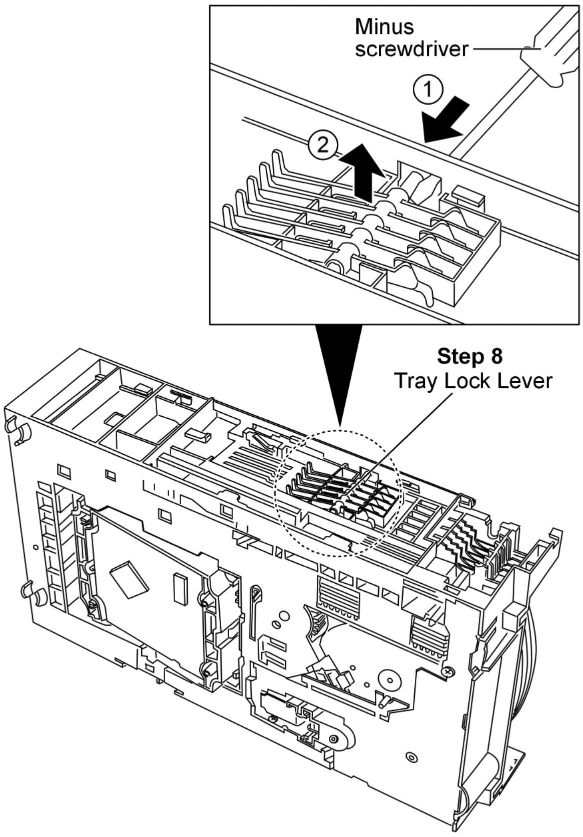

Note:
Do not exert force on the OC Gear Spring to avoid damage it.
fragile
OC Gear Spring
OC Gear Assy
Step 6

Step 6: Remove the OC gear assy followed by the OC gear spring as arrow shown.

Caution: Ensure the OC gear assy and OC gear spring are handle properly and keep them in a safe place.

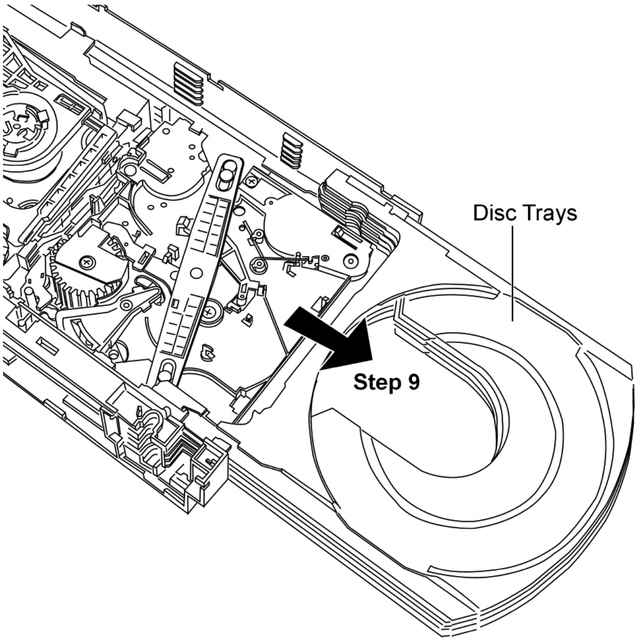

Step 7
Claw
①
②
Trigger Slide Plate

Step 7: Press the claw, push backwards and remove the trigger slide plate as arrows shown.

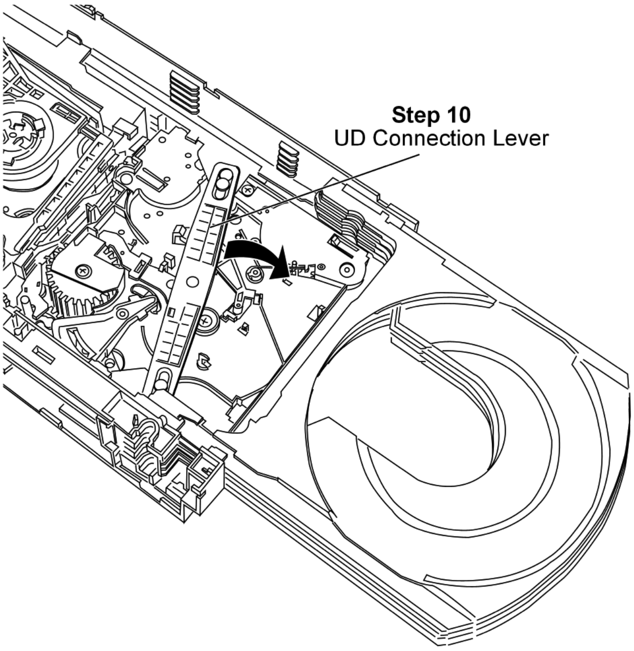

Minus screwdriver
①
②
Step 8
Tray Lock Lever

Step 8: Use a minus screwdriver slot into the gap and push out the tray lock lever as arrows shown.

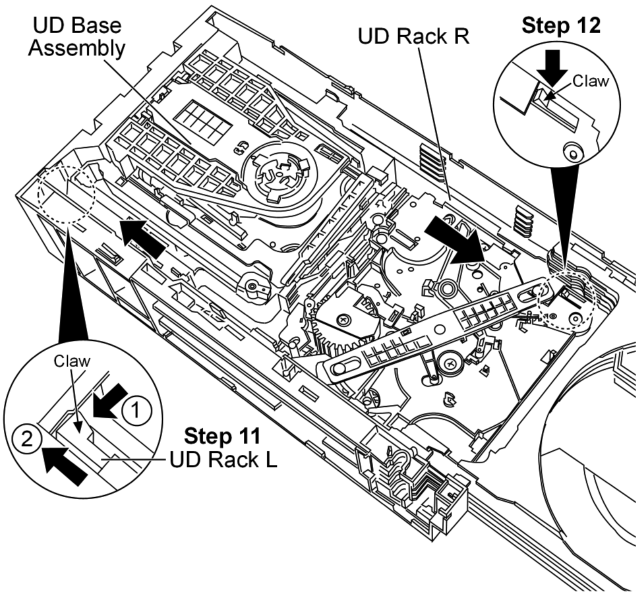
Caution: Do not exert force as it may cause damage to the tray lock lever.


Disc Trays
Step 9

Step 9: Push the disc trays towards the front as arrow shown.

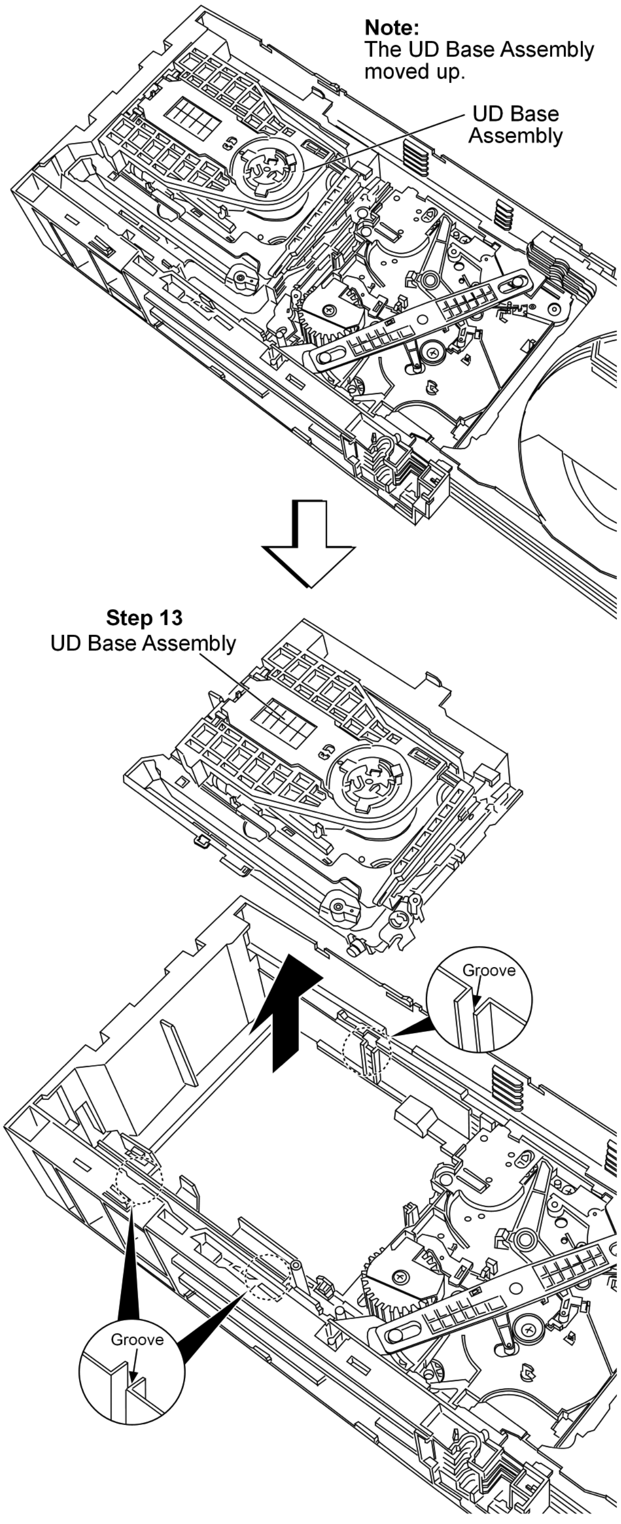

Step 10
UD Connection Lever

Step 10: Turn the UD connection lever clockwise.


UD Base Assembly
UD Rack R
Step 12
Claw
Claw
1
2
Step 11
UD Rack L

Step 11: Push the claw and slide the UD rack L as arrows shown.

Step 12: Press and hold the claw at the pitch plate then push the UD rack R as arrows shown.

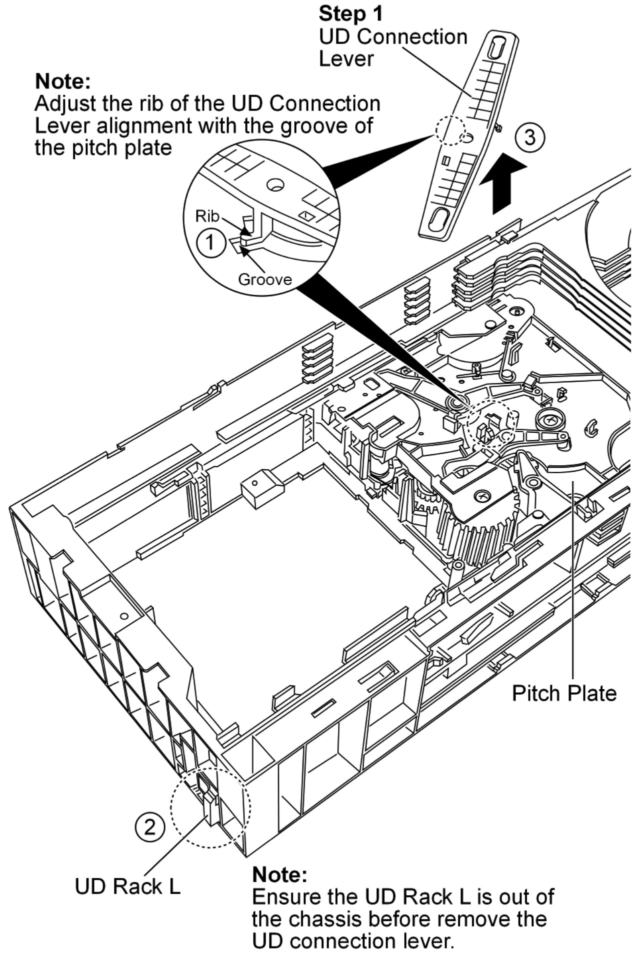

Note:
The UD Base Assembly moved up.
UD Base Assembly
Step 13
UD Base Assembly
Groove
Groove

Step 13: Remove the UD base assembly as arrow shown.

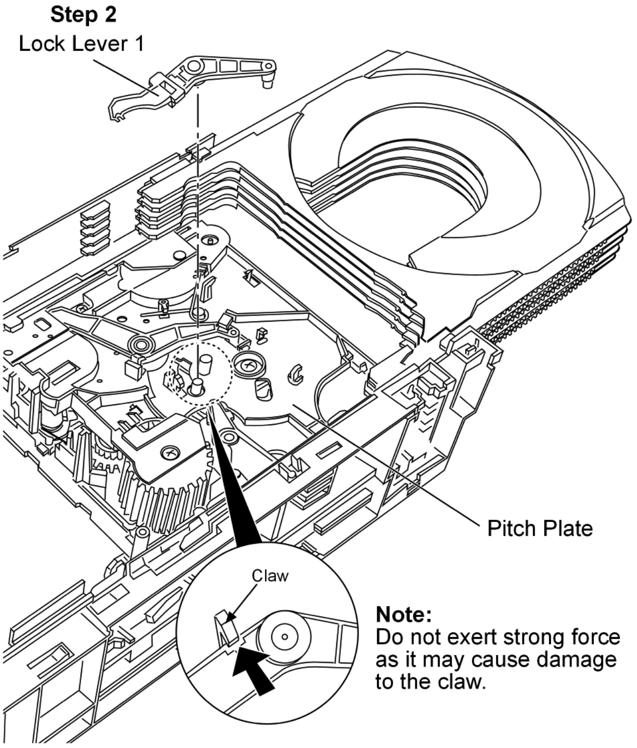
7.1.2. Disassembly of Disc Trays

- Follow the (Step 1) to (Step 13) of item 7.1.1. (Disassembly of UD Base Assembly)

- **Disassembly of UD connection lever**

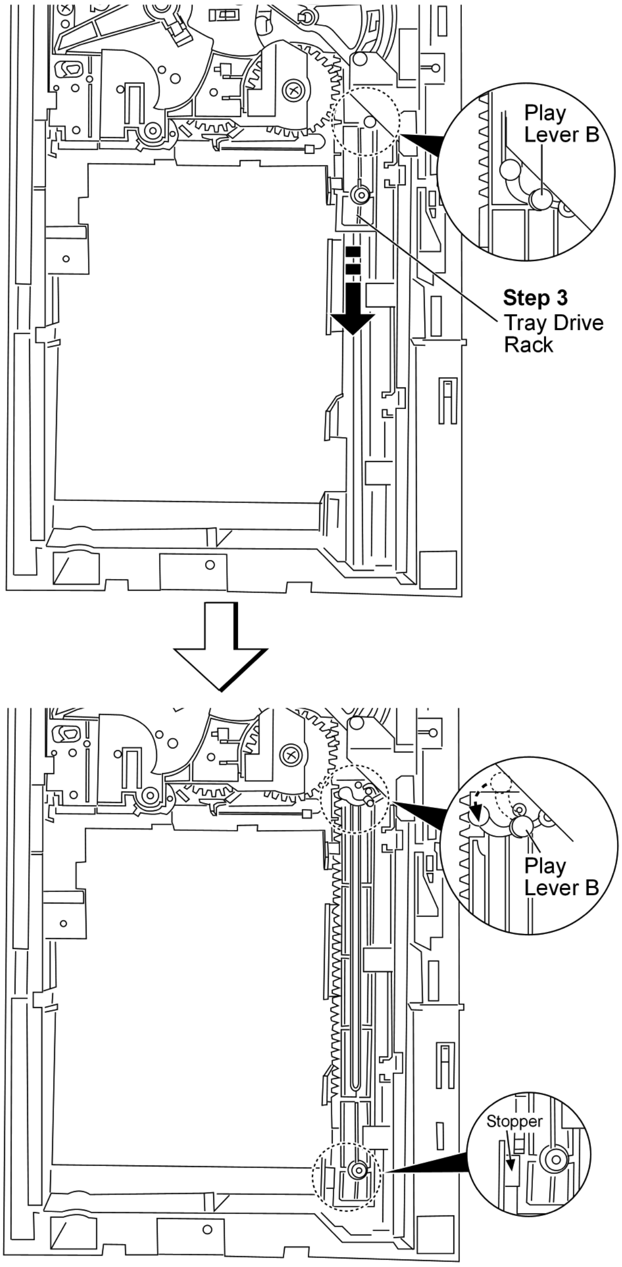

Step 1
UD Connection Lever
Note:
Adjust the rib of the UD Connection Lever alignment with the groove of the pitch plate
Rib
①
Groove
③
Pitch Plate
②
UD Rack L
Note:
Ensure the UD Rack L is out of the chassis before remove the UD connection lever.

Step 1: Remove the UD connection lever.

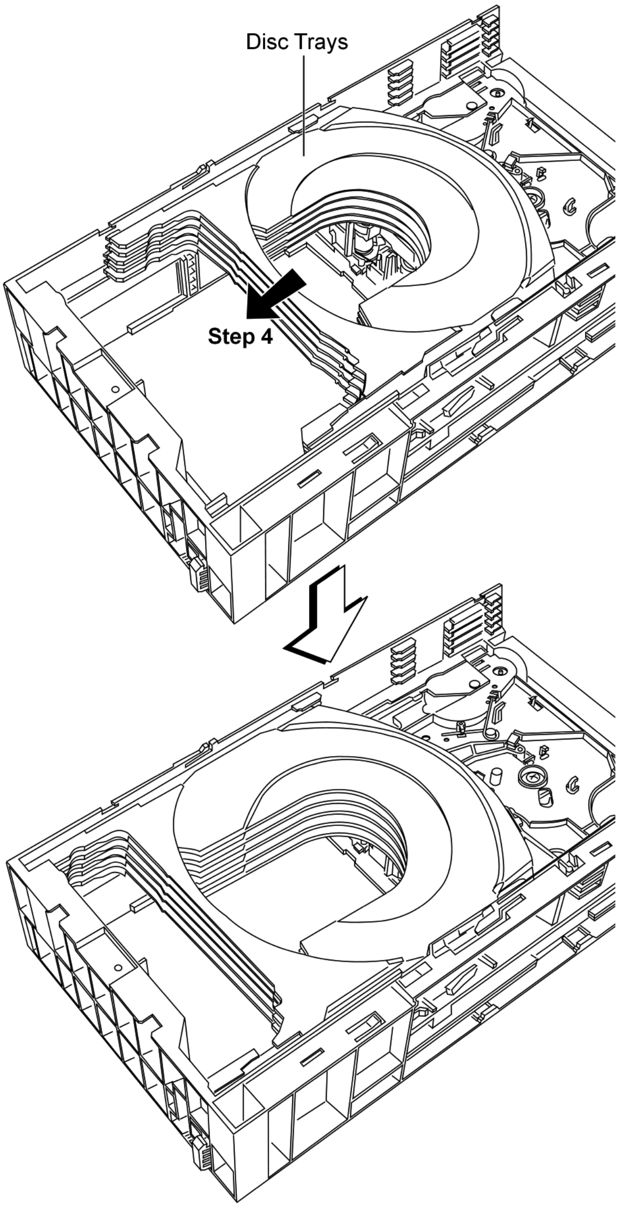

Step 2
Lock Lever 1
Pitch Plate
Claw
Note:
Do not exert strong force as it may cause damage to the claw.

Step 2: Push the claw as arrow shown and remove the lock lever 1.

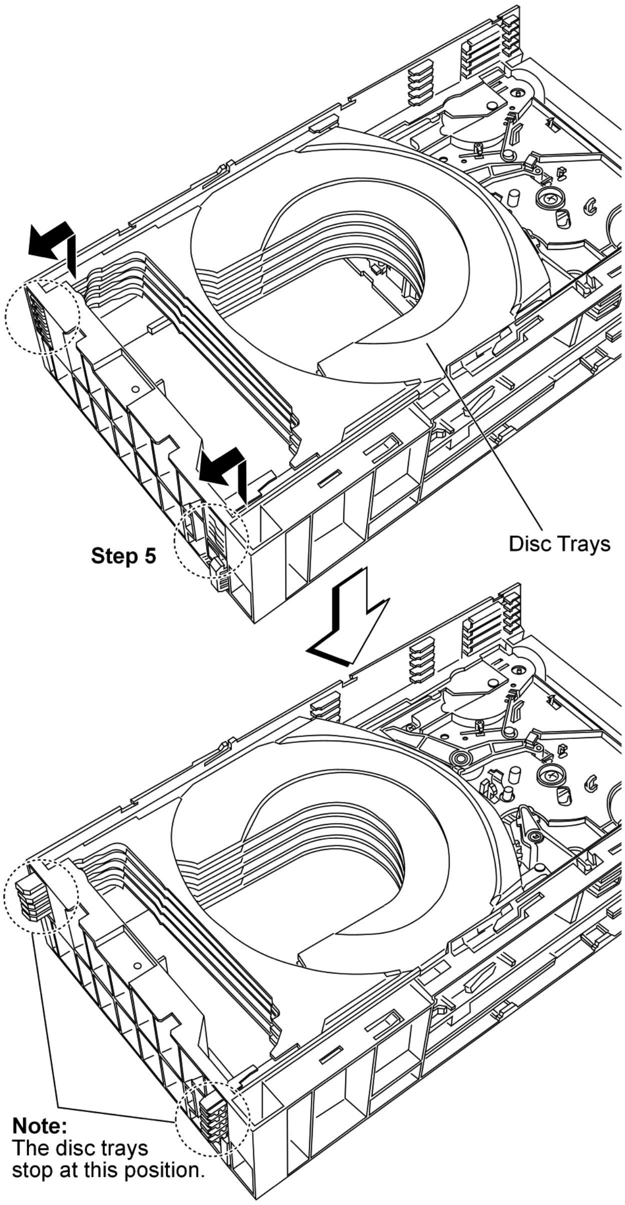
Caution: Do not exert force as it may cause the claw to be damage.


Play
Lever B
Step 3
Tray Drive
Rack
Play
Lever B
Stopper

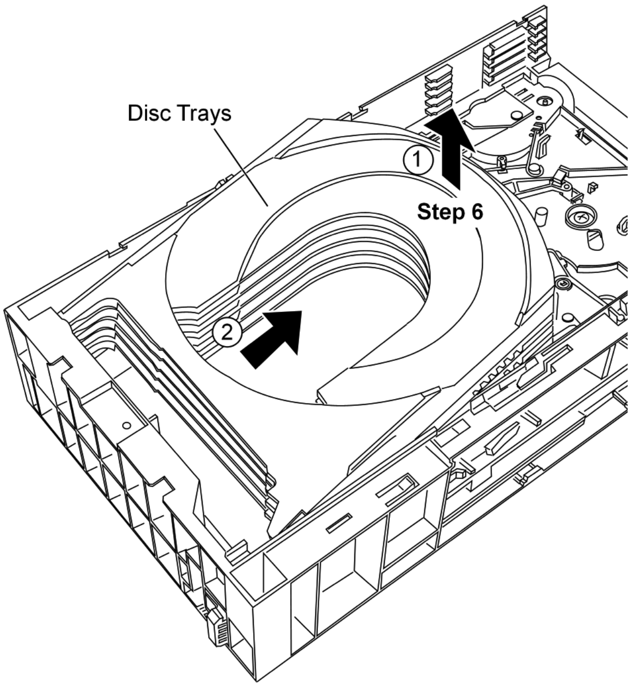
Step 3: Push the tray drive rack as arrow shown to hit the stopper.


Disc Trays
Step 4

Step 4: Push the 5 disc trays as arrow shown until it stop (bottom picture).


Step 5
Disc Trays
Note:
The disc trays
stop at this position.

Step 5: Lift up slightly and push the 5 disc trays further as arrows shown.

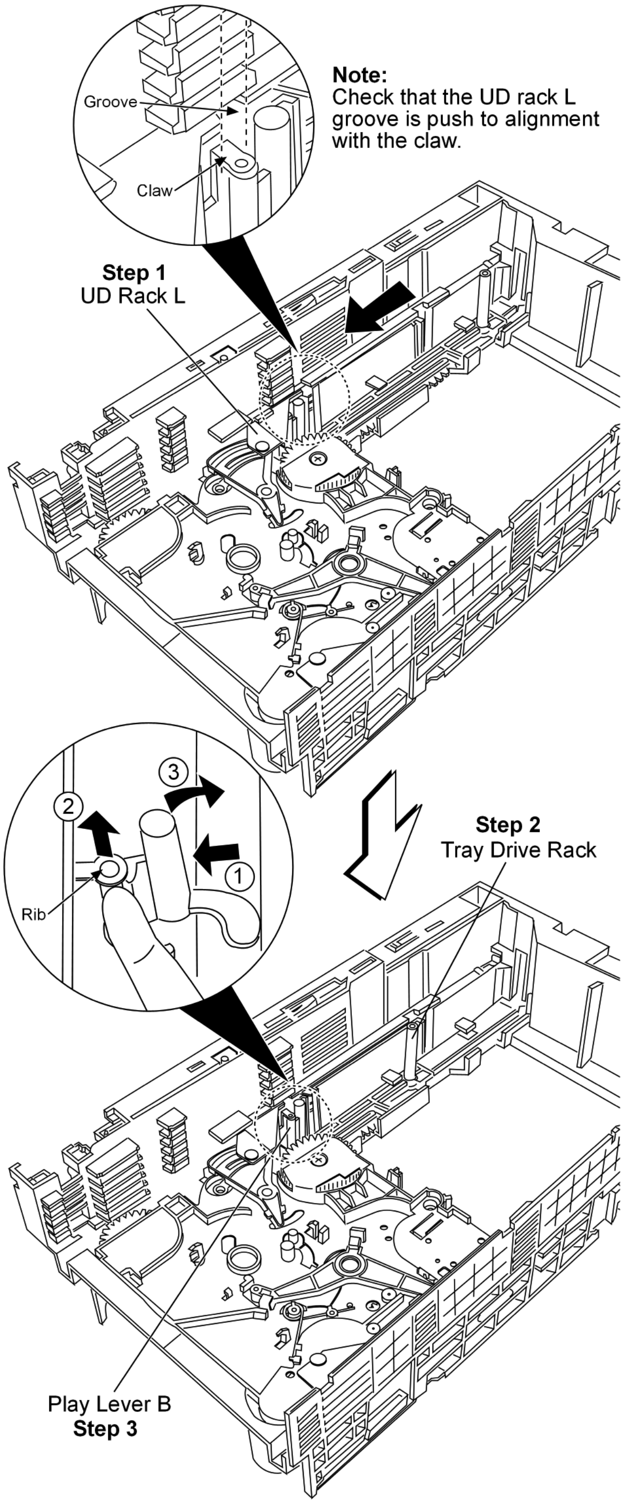

Disc Trays
①
②
Step 6

Step 6: Tilt and remove the 5 disc trays as arrows shown.

7.1.3. Disassembly of CD Loading Unit

- Follow the (Step 1) to (Step 13) of item 7.1.1. (Disassembly of UD Base Assembly)
- Follow the (Step 1) to (Step 6) of item 7.1.2. (Disassembly of Disc Trays)

- **Disassembly of play lever B**


Groove
Claw
Note:
Check that the UD rack L groove is push to alignment with the claw.
Step 1
UD Rack L
3
2
1
Rib
Step 2
Tray Drive Rack
Play Lever B
Step 3

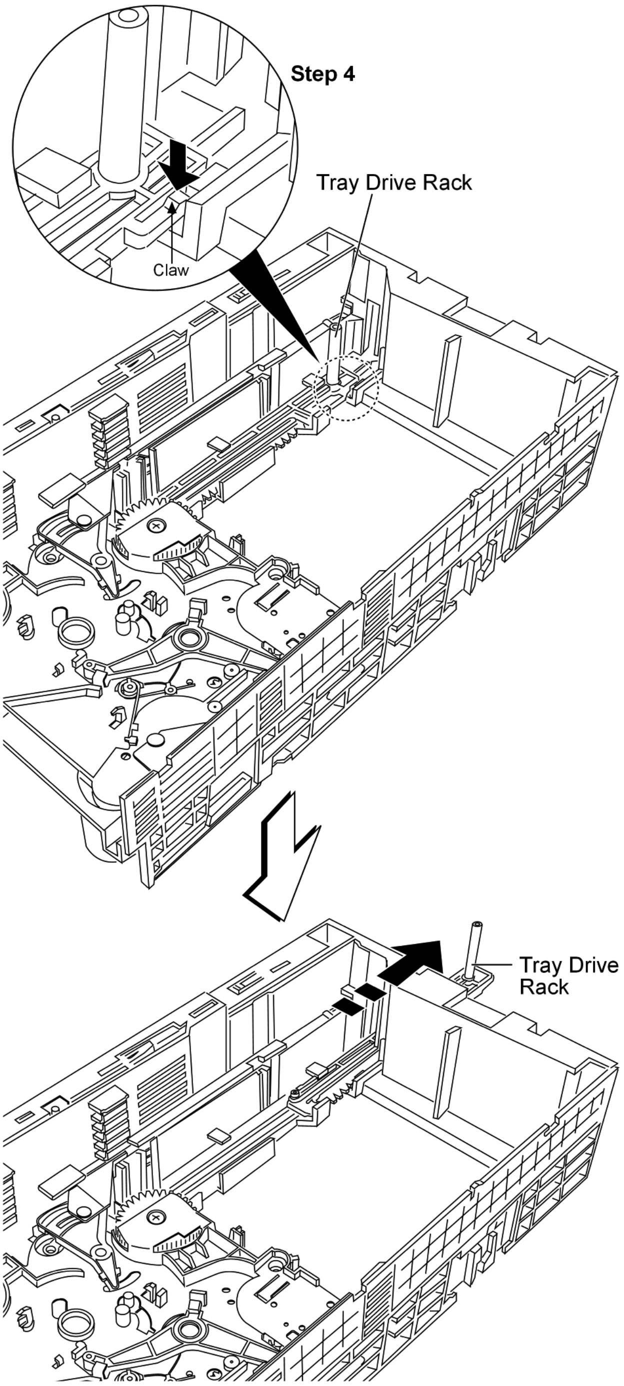
Step 1: Push the UD rack L forwards as arrow shown.

Step 2: Position the tray drive rack in the center.

Step 3: Push the play lever B and lift up the rib slightly to remove the play lever B as arrows shown.

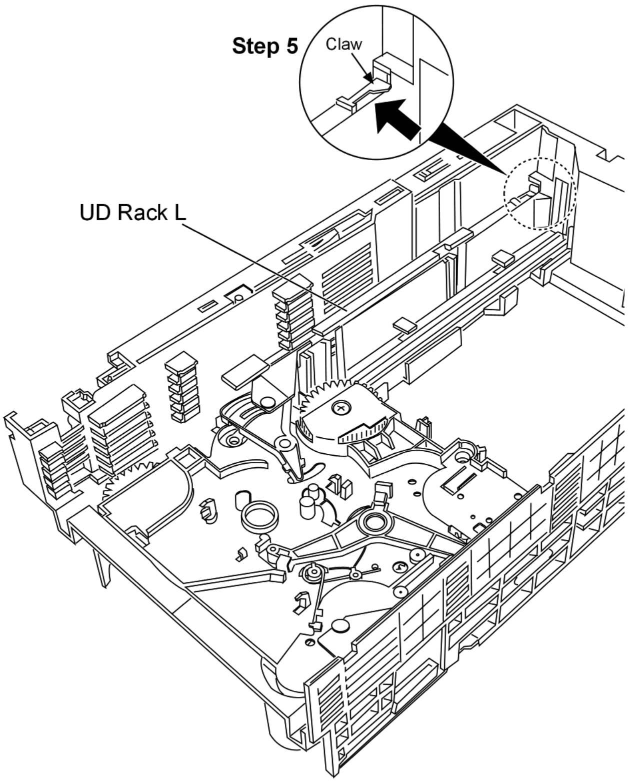
Caution: Make sure do not break the rib when removing the play lever B. The rib break easily by using the tools.

· Disassembly of tray drive rack

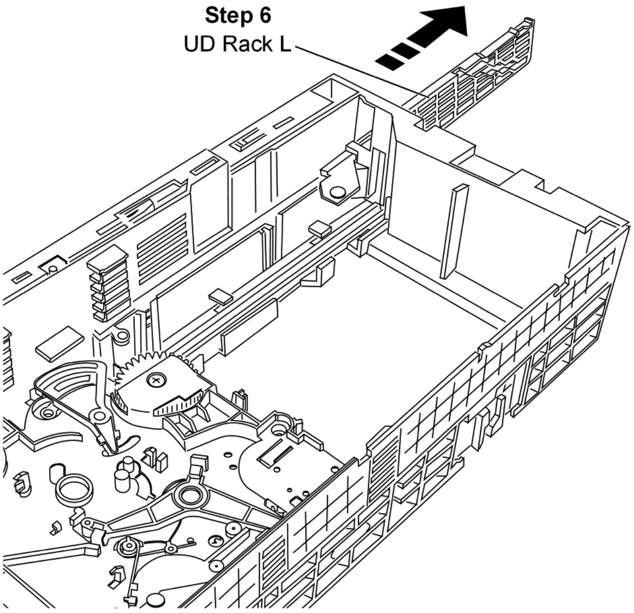

Step 4
Tray Drive Rack
Claw
Tray Drive Rack

Step 4: Release the claw as arrow shown (top picture) then slide and remove the tray drive rack as arrow shown (bottom picture).

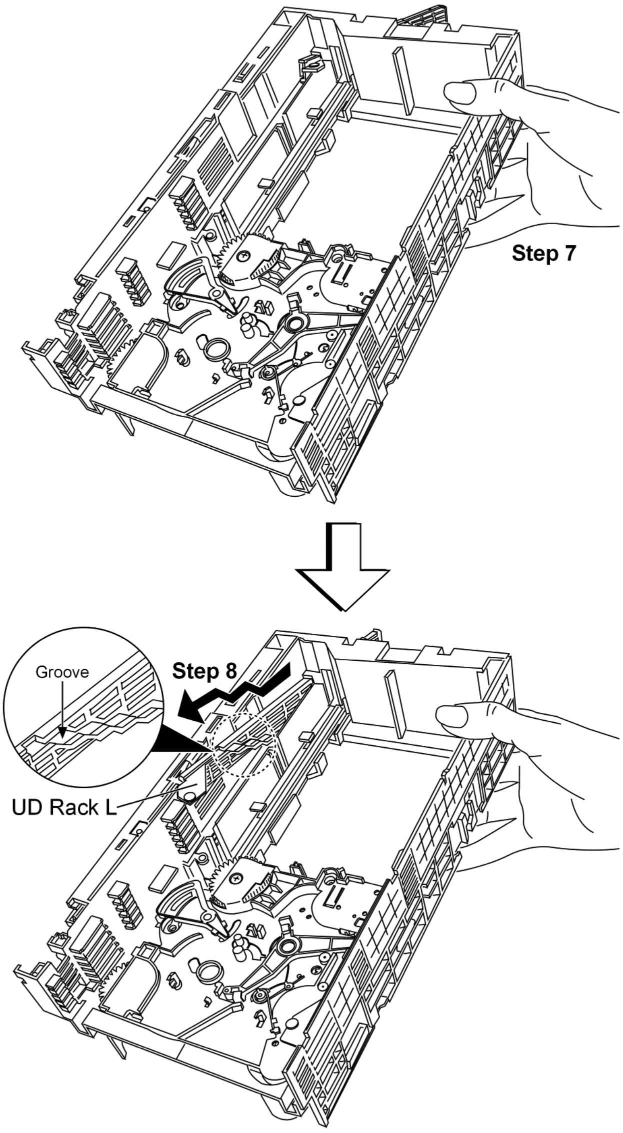
· Disassembly of UD rack L


Step 5
Claw
UD Rack L

Step 5: Push the claw as arrow shown.


Step 6
UD Rack L

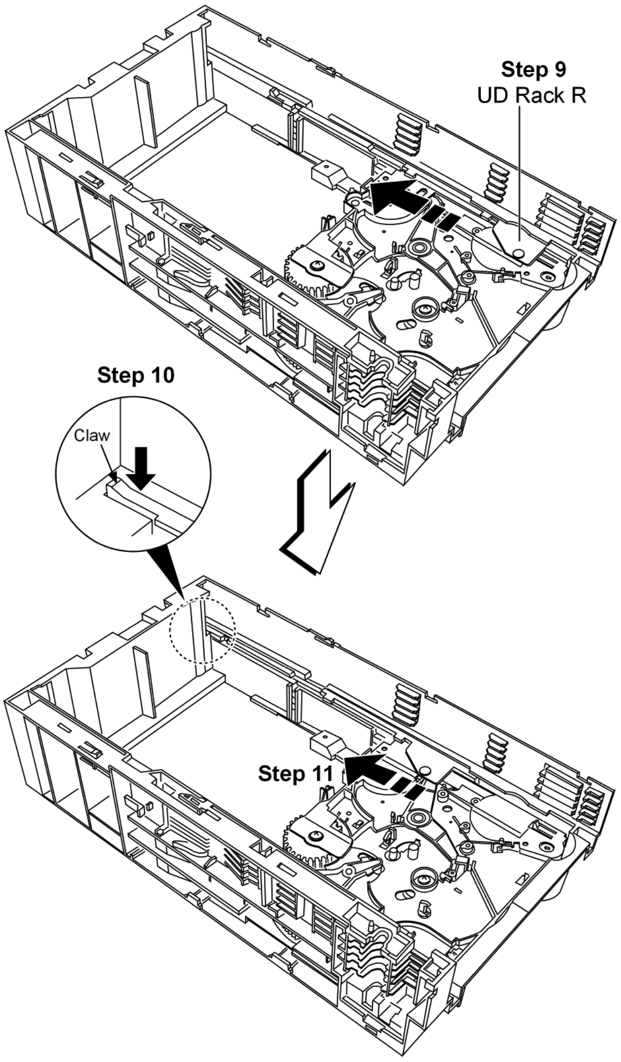
Step 6: Slide the UD rack L as arrow shown.

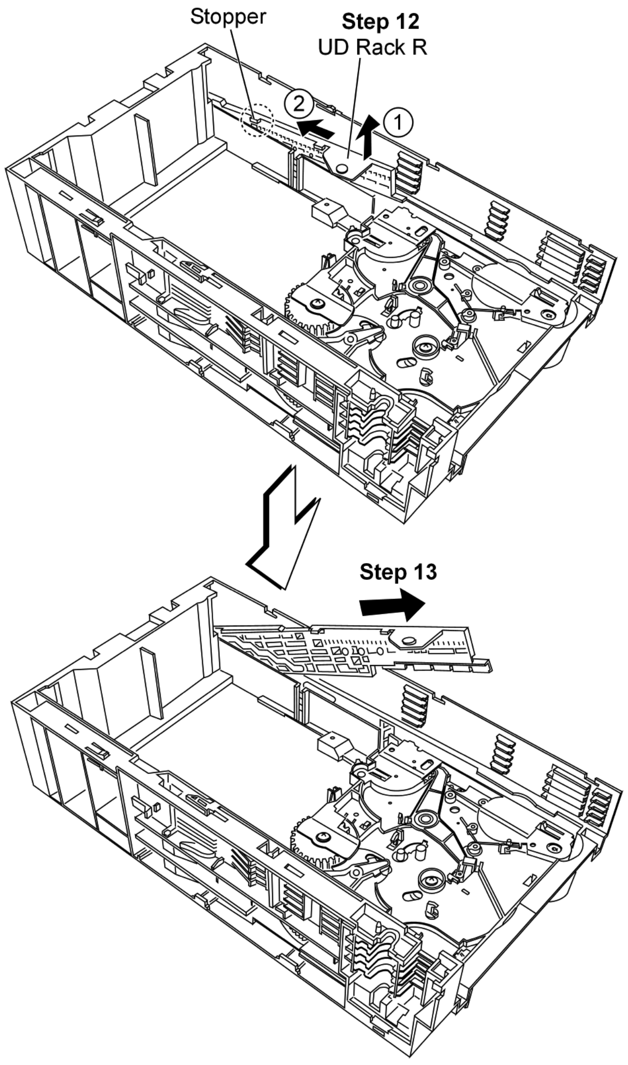

Step 7
Groove
Step 8
UD Rack L

Step 7: Lift up the unit as shown.

Step 8: Follow the groove to lift up and remove the UD rack L as arrow shown.

- **Disassembly of UD rack R**


Step 9
UD Rack R
Step 10
Claw
Step 11


Stopper
Step 12
UD Rack R
②
①
Step 13

Step 9: Slide the UD rack R as arrow shown until it stop.

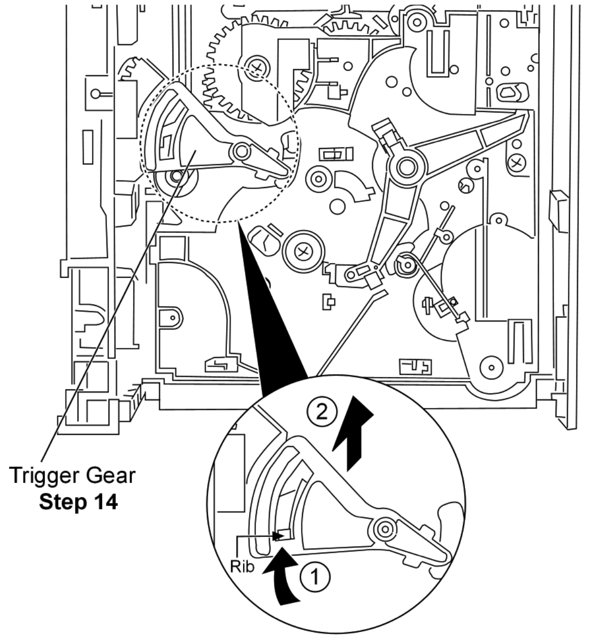
Step 10: Press the claw as arrow shown.

Step 11: Continue to slide the UD rack R as arrow shown until it stop.

Step 12: Lift up the UD rack R and slide backwards to stop at the stopper.

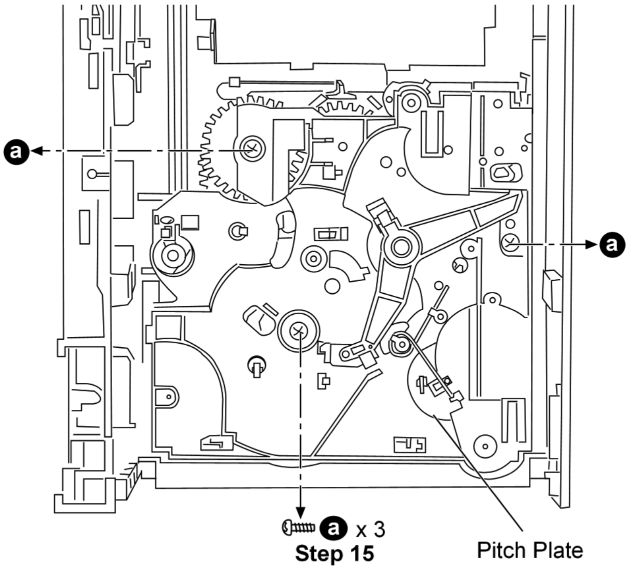
Step 13: Remove it as arrow shown.

· **Disassembly of trigger gear**

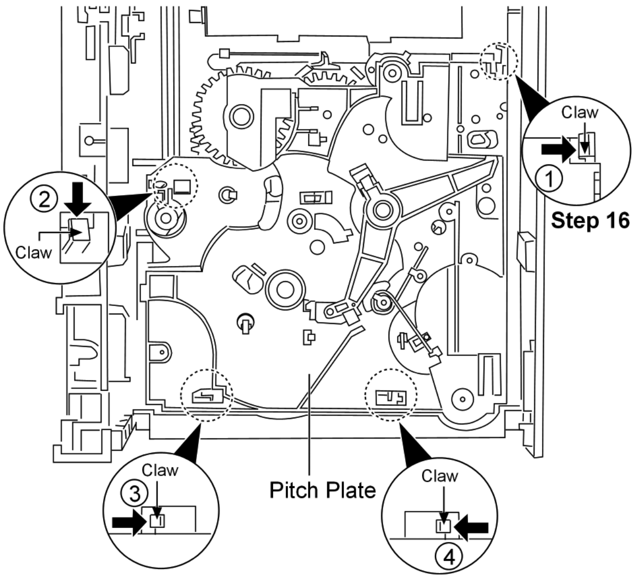

②
Trigger Gear
Step 14
Rib
①

Step 14: Turn the trigger gear clockwise and remove it as arrows shown.

· Disassembly of pitch plate

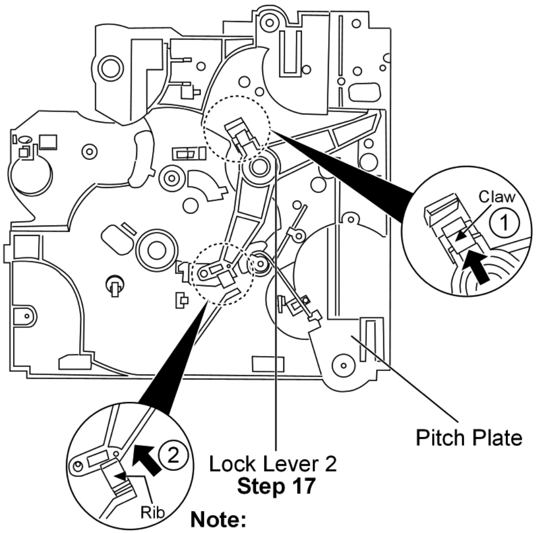

a
a
a x 3
Step 15
Pitch Plate

Step 15: Remove 3 screws


Claw
①
Step 16
②
Claw
Claw
③
Pitch Plate
Claw
④

Step 16: Release 4 claws as arrows shown in order followed by detach the pitch plate.

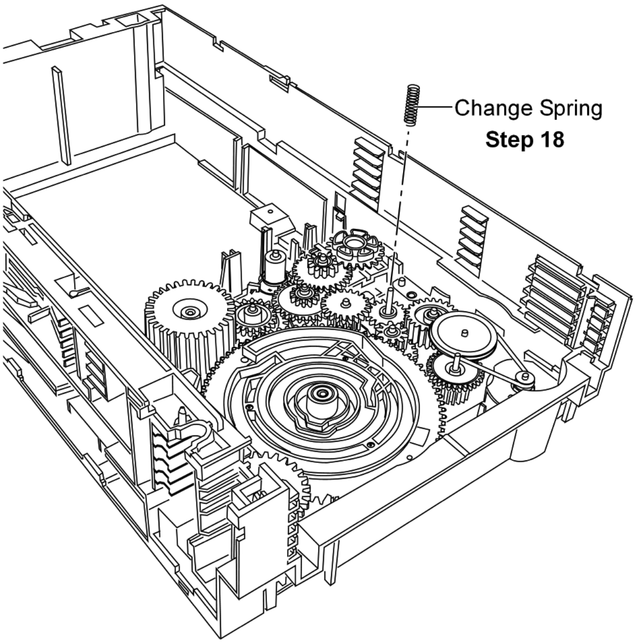
· Disassembly of lock lever 2


Claw
①
②
Rib
Lock Lever 2
Step 17
Pitch Plate

Note:
Remove the Lock Lever 2 as arrow shown without pushing the rib.

Step 17: Release the claw and pull out the lock lever 2 as arrows shown. (The rib is fragile, do not exert force on it).

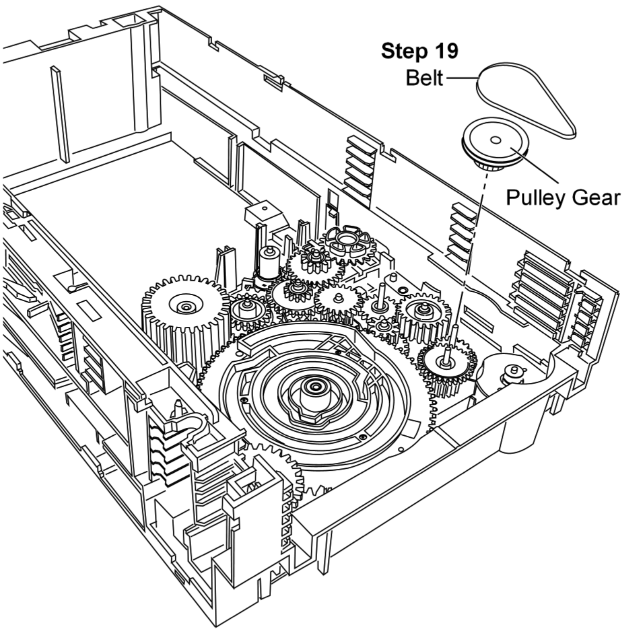
· Disassembly of change spring

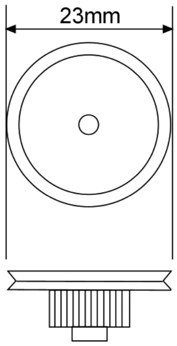

Change Spring
Step 18

Step 18: Remove the change spring.

Caution: Handle the change spring carefully, do not lose it. Put in a proper storage location.

· **Disassembly of pulley gear and belt**

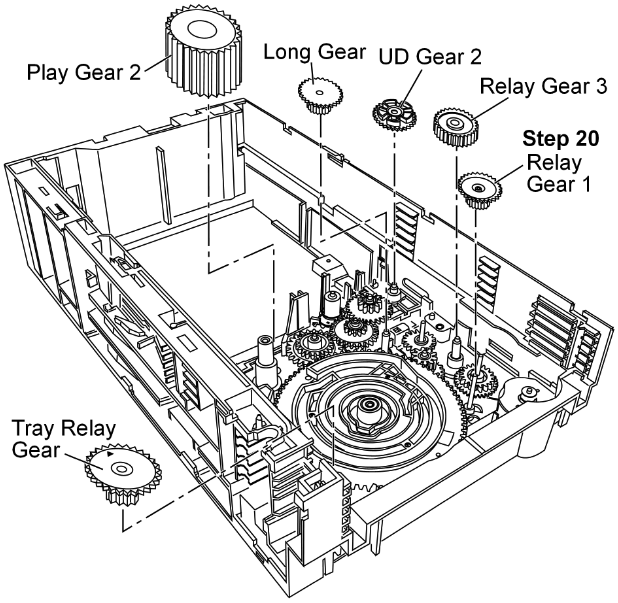

Step 19
Belt
Pulley Gear

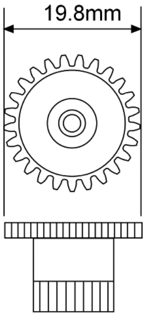


Pulley Gear

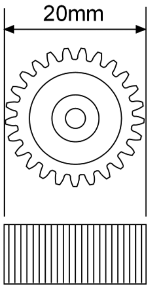
Step 19: Remove the belt and pull out the pulley gear.

· **Disassembly of gears**

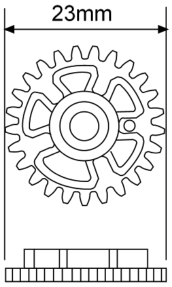

Play Gear 2
Long Gear
UD Gear 2
Relay Gear 3
Step 20
Relay Gear 1
Tray Relay Gear



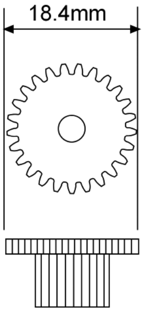
Relay Gear 1



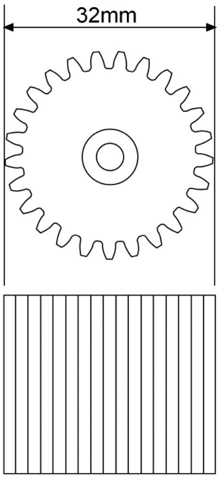
Relay Gear 3



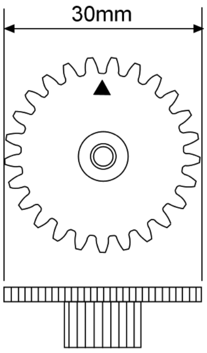
UD Gear 2



Long Gear

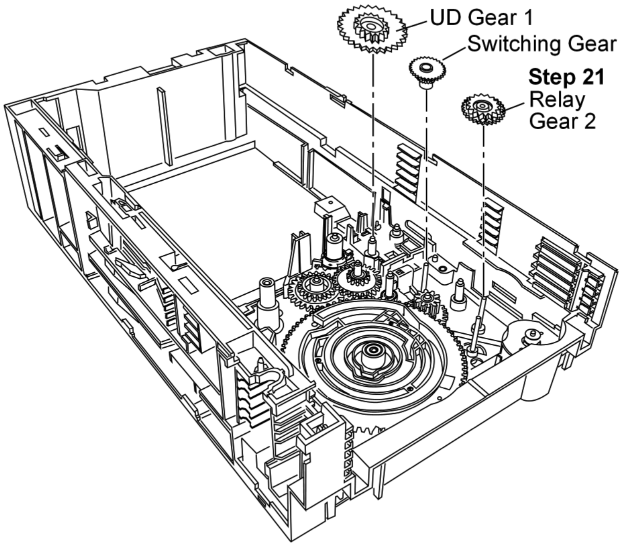


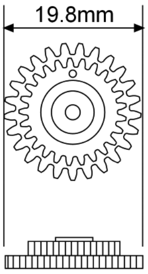
Play Gear 2



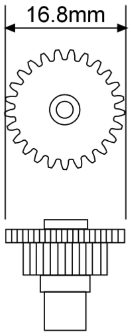
Tray Relay Gear

Step 20: Remove the relay gear 1, relay gear 3, UD gear 2, long gear, play gear 2 and tray relay gear in order.

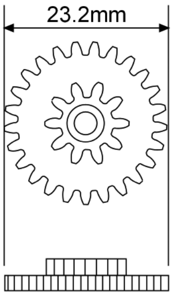

UD Gear 1
Switching Gear
Step 21
Relay Gear 2



Relay Gear 2



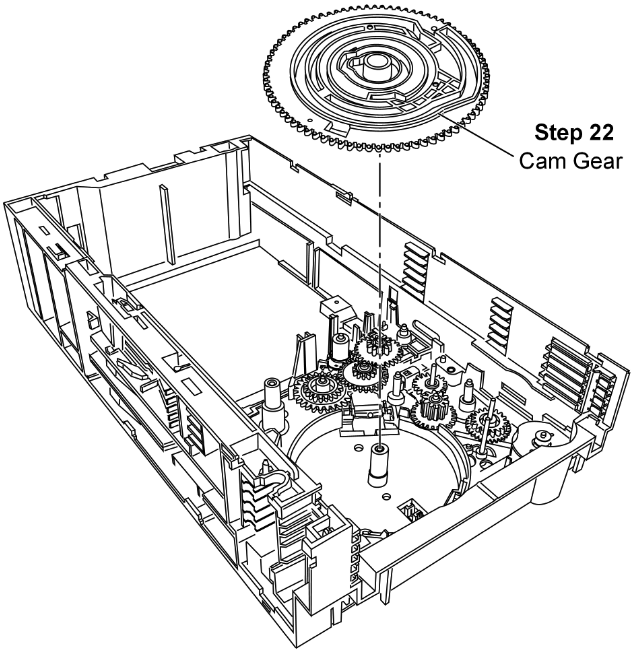
Switching Gear



UD Gear 1

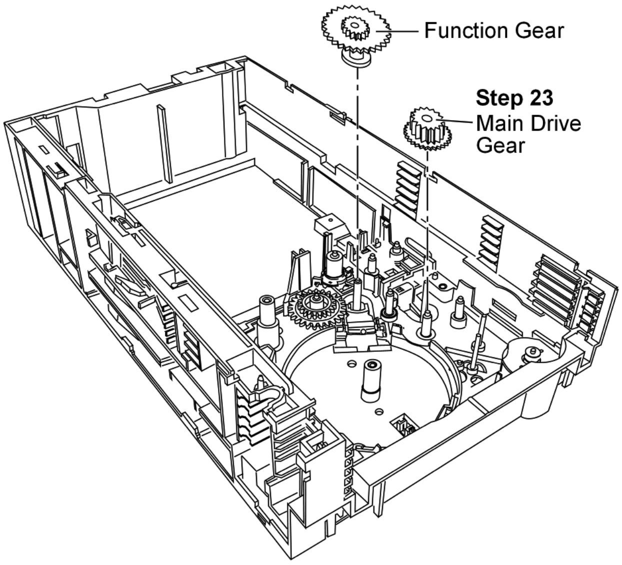
Step 21: Remove relay gear 2, switching gear, UD gear 1 in order.

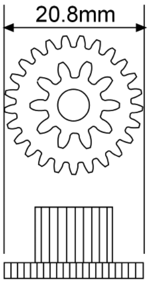
· Disassembly of cam gear


Step 22
Cam Gear

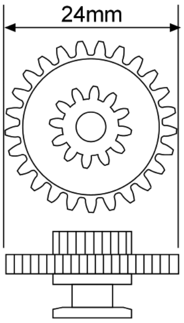
Step 22: Remove cam gear.

· Disassembly of function gear and main drive gear


Function Gear
Step 23
Main Drive Gear



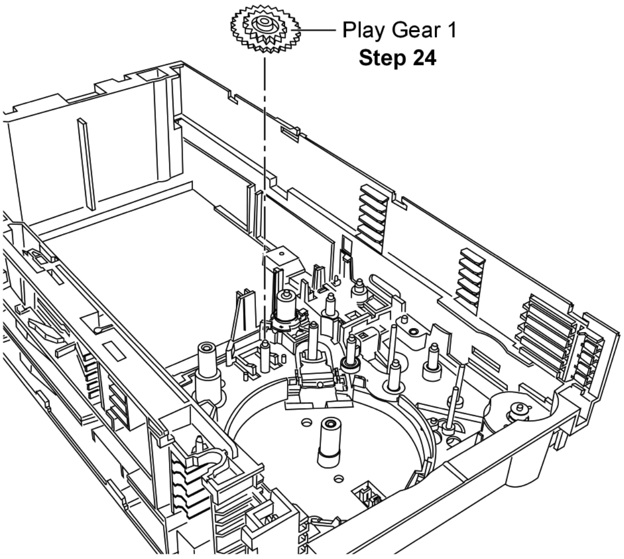
Main Drive Gear

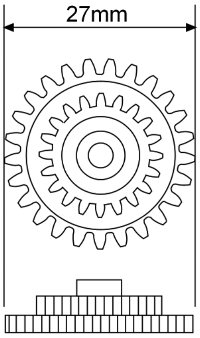


Function Gear

Step 23: Remove main drive gear and function gear.

· Disassembly of play gear 1

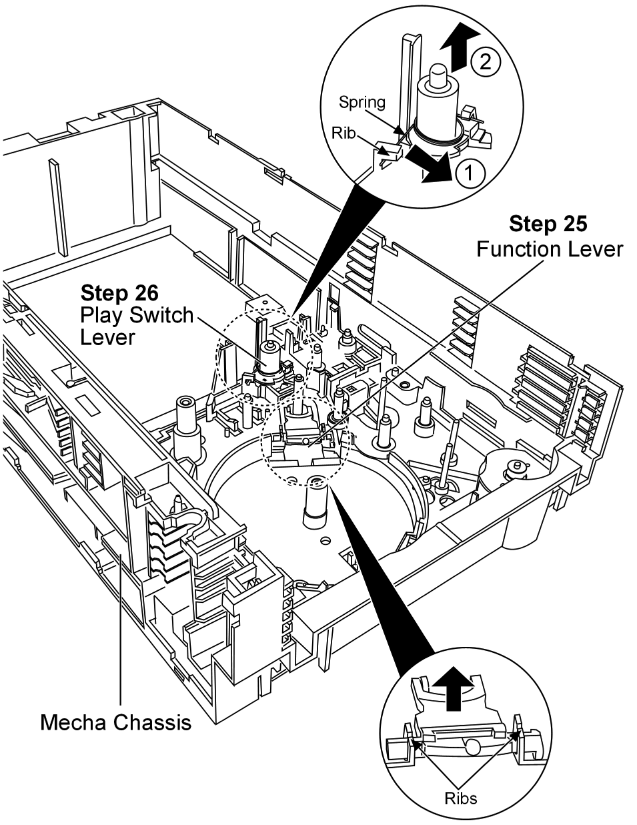

Play Gear 1
Step 24



Play Gear 1

Step 24: Remove play gear 1.

· Disassembly of function lever

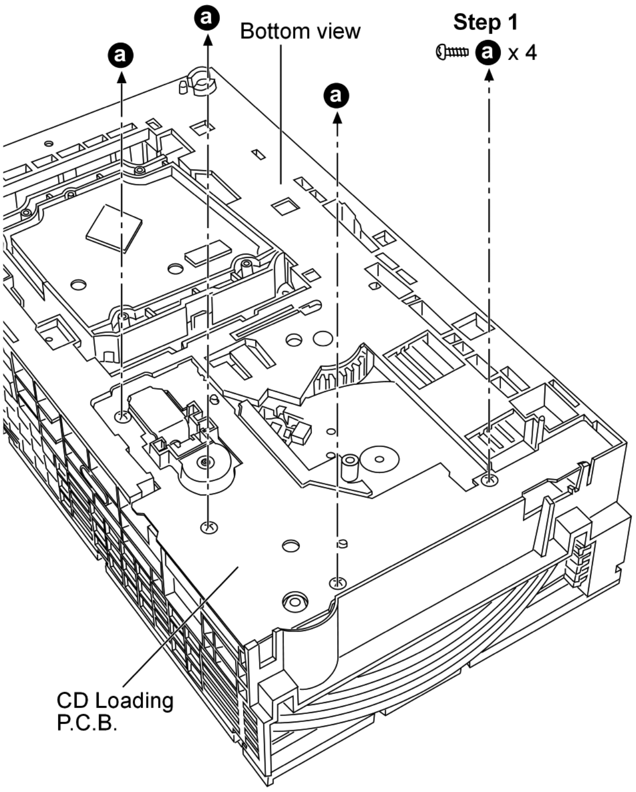

2
Spring
Rib
1
Step 25
Function Lever
Step 26
Play Switch
Lever
Mecha Chassis
Ribs

Step 25: Remove the function lever from the ribs as arrow shown.

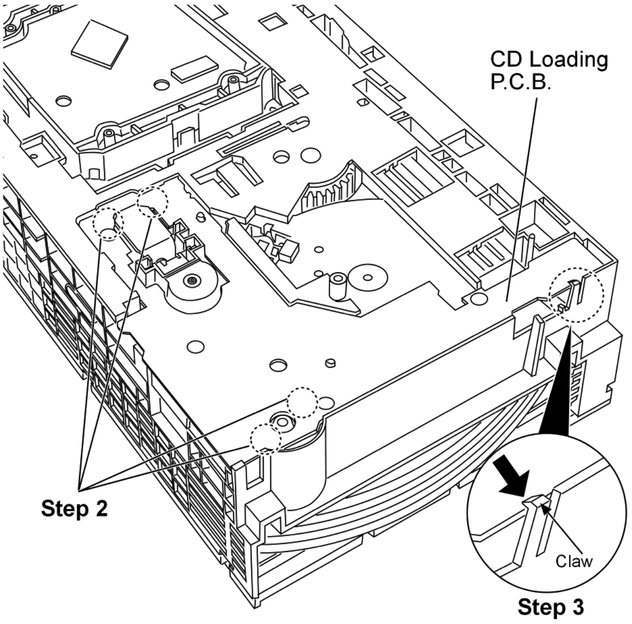
Step 26: Release the spring from the rib as arrow shown to remove the play switch lever.

Note: For changing of the mecha chassis, please follow Step 1 to Step 5 of item 7.1.4 (Disassembly of CD Loading P.C.B.), Step 3 to Step 4 of item 7.1.5 (Disassembly of Plunger Lever) and Step 2 of item 7.1.6 (Disassembly of Motor Unit)

7.1.4. Disassembly of CD Loading P.C.B.

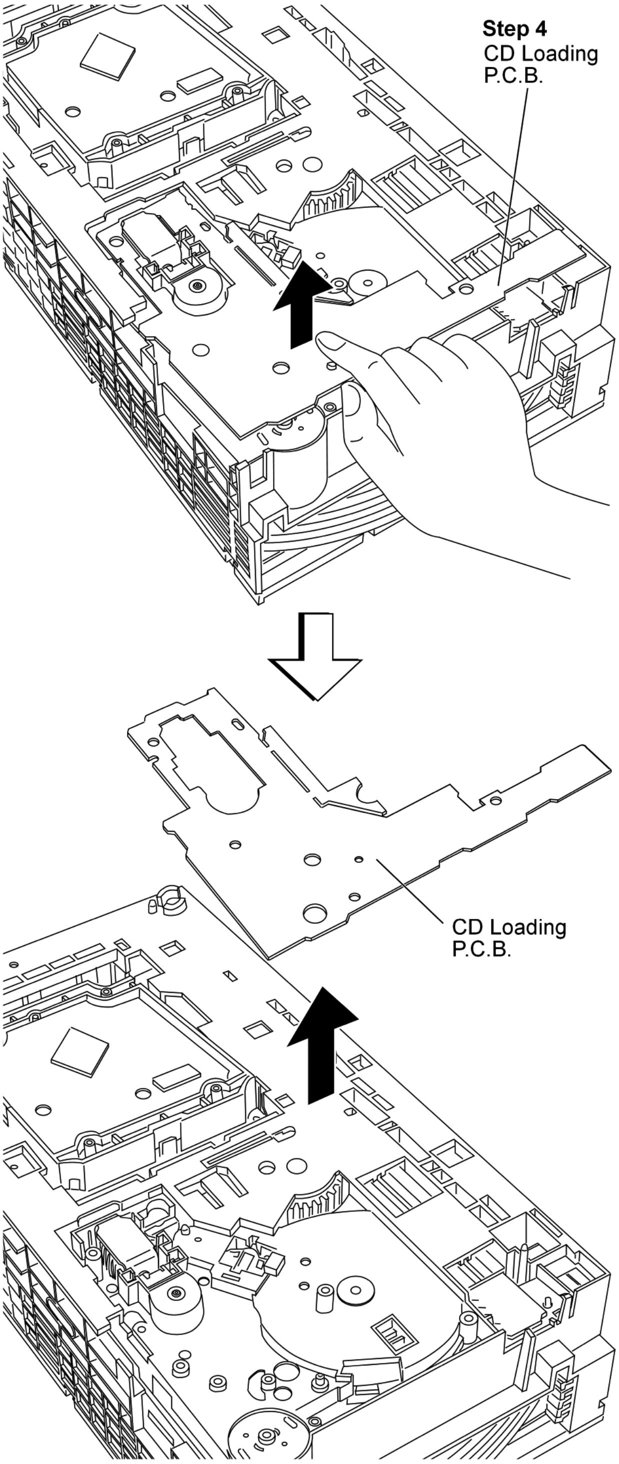

a
a
Bottom view
a
Step 1
a x 4
CD Loading
P.C.B.

Step 1: Turn over the unit and remove 4 screws from the CD Loading P.C.B.


CD Loading
P.C.B.
Step 2
Claw
Step 3

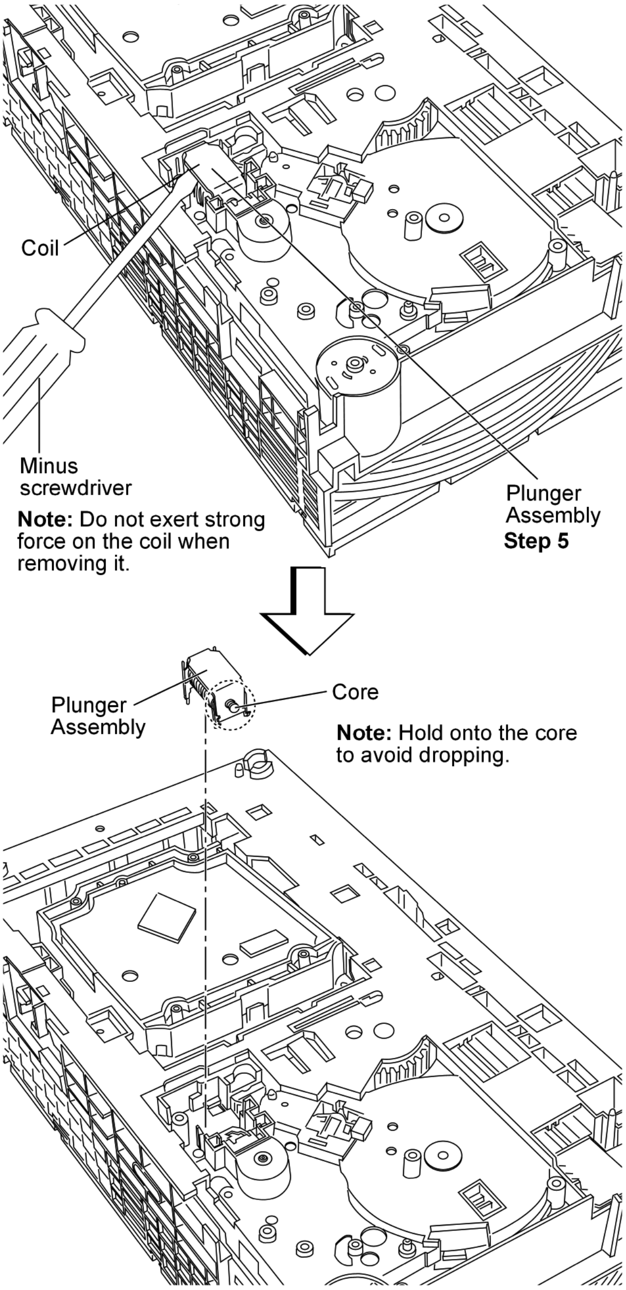
Step 2: Unsolder the 4 points.

Step 3: Release 1 claw as arrow shown.


Step 4
CD Loading P.C.B.
CD Loading P.C.B.

Step 4: Remove the CD Loading P.C.B. as arrows shown.

· **Disassembly of plunger assembly**


Coil
Minus screwdriver
Plunger Assembly
Step 5
Plunger Assembly
Core

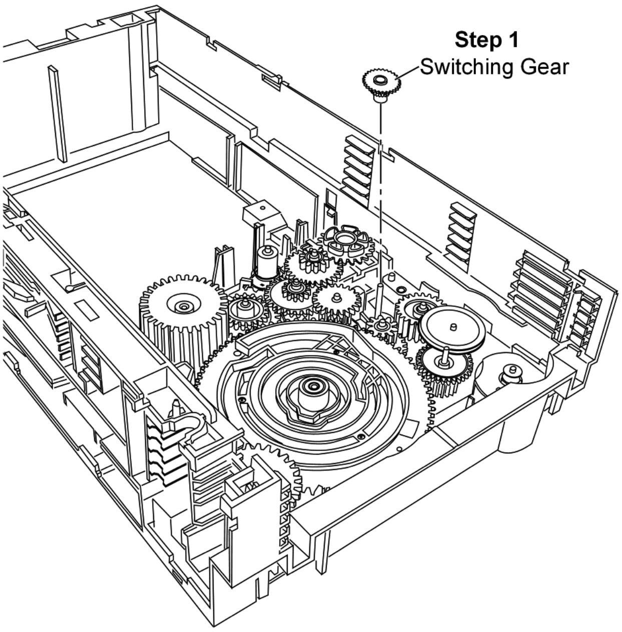
Note: Do not exert strong force on the coil when removing it.

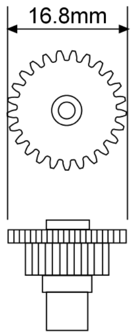
Note: Hold onto the core to avoid dropping.

Step 5: Remove the plunger assembly by using a minus screwdriver.

7.1.5. Disassembly of Plunger Lever

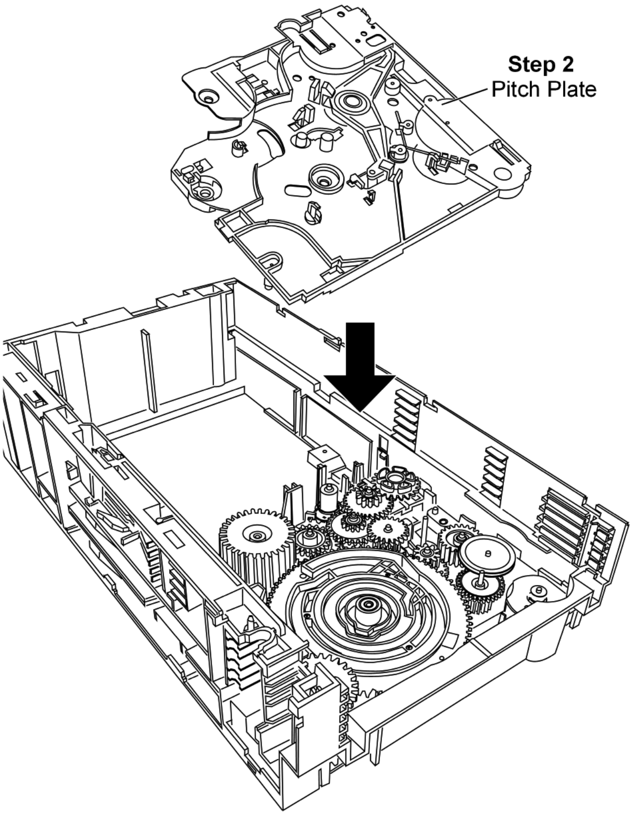
- Follow the (Step 1) to (Step 13) of item 7.1.1. (Disassembly of UD Base Assembly)
- Follow the (Step 1) to (Step 6) of item 7.1.2. (Disassembly of Disc Trays)
- Follow the (Step 1) to (Step 18) of item 7.1.3. (Disassembly of CD Loading Unit)
- Follow the (Step 1) to (Step 5) of item 7.1.4. (Disassembly of CD Loading P.C.B.)


Step 1
Switching Gear



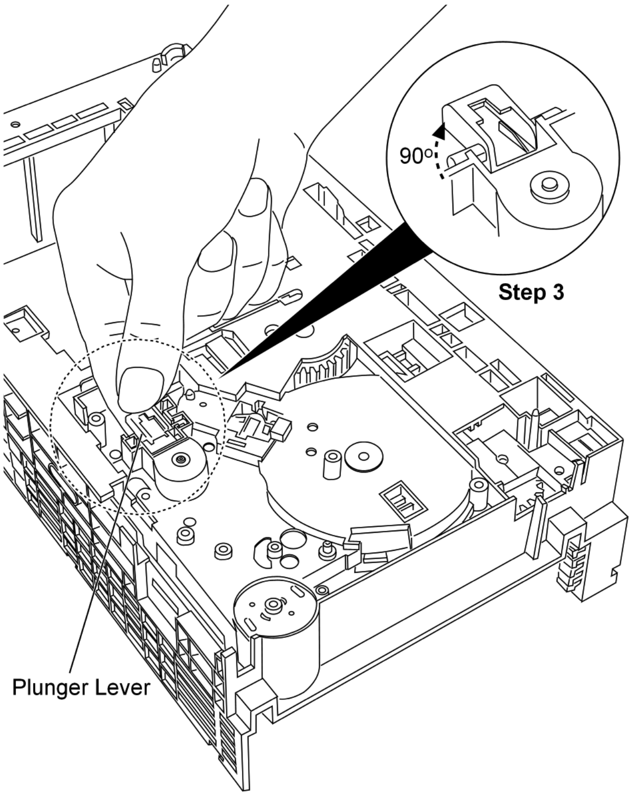
Switching Gear

Step 1: Remove the switching gear.

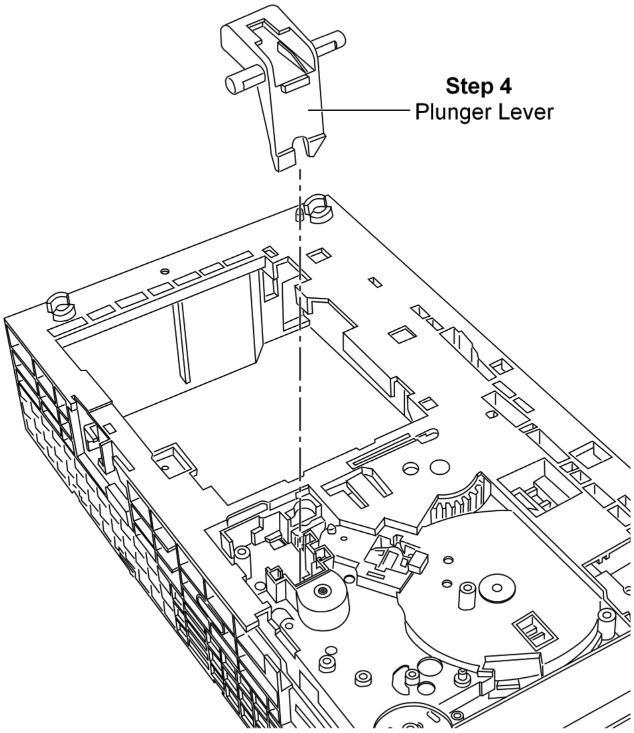

Step 2
Pitch Plate

Step 2: Install the pitch plate.

Note: Ensure the pitch plate seats properly onto it.


90°
Step 3
Plunger Lever

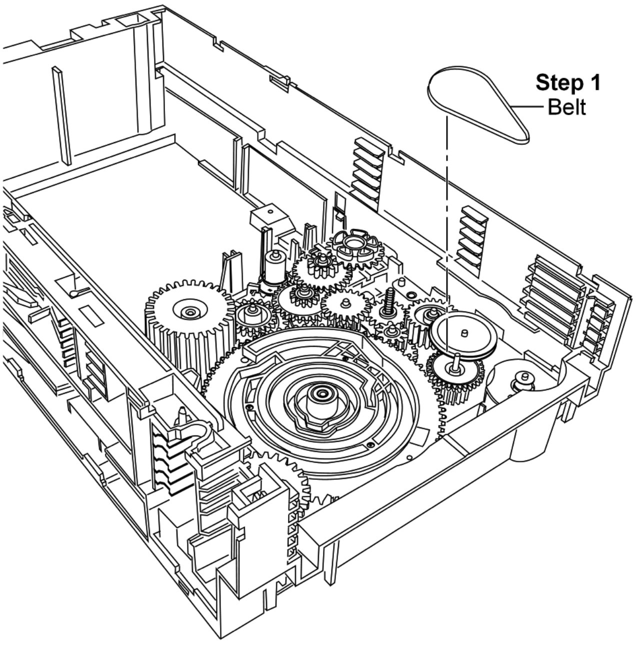
Step 3: Lift up the plunger lever in 90°


Step 4
Plunger Lever

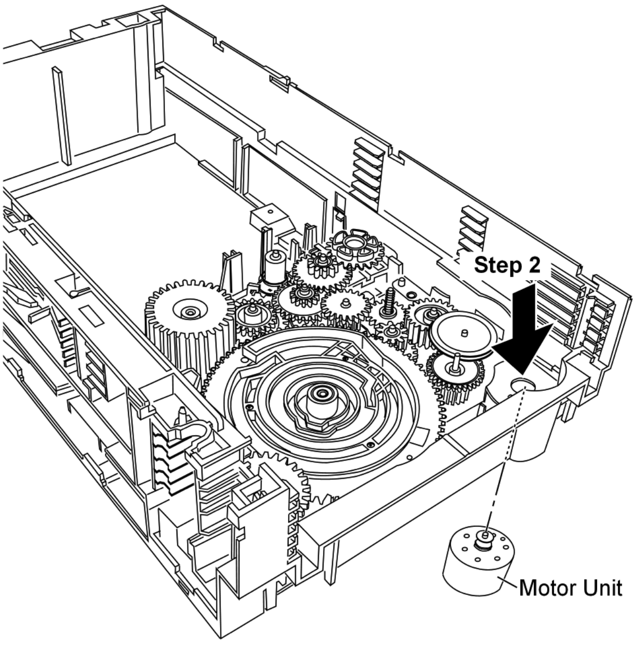
Step 4: Remove the plunger lever in 90° position.

7.1.6. Disassembly of Motor Unit

- Follow the (Step 1) to (Step 13) of item 7.1.1. (Disassembly of UD Base Assembly)
- Follow the (Step 1) to (Step 6) of item 7.1.2. (Disassembly of Disc Trays)
- Follow the (Step 1) to (Step 16) of item 7.1.3. (Disassembly of CD Loading Unit)
- Follow the (Step 1) to (Step 4) of item 7.1.4. (Disassembly of CD Loading P.C.B.)



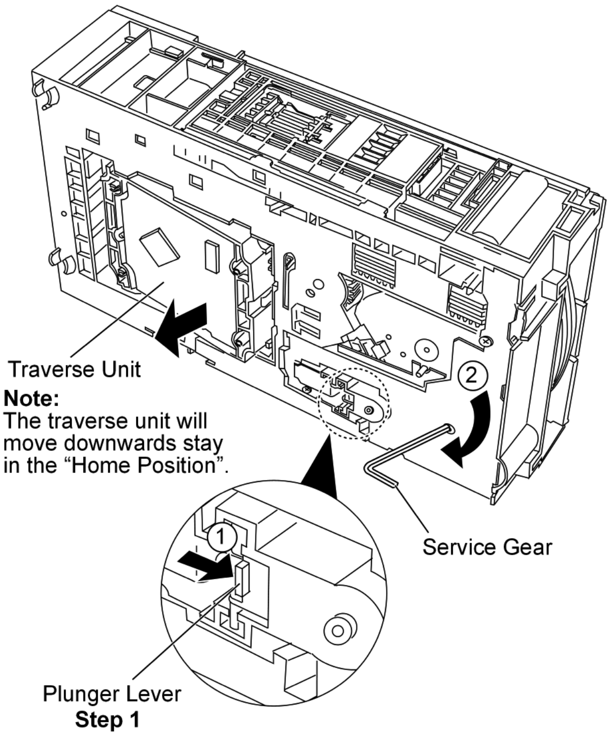
Step 1: Remove the belt.


Step 2
Motor Unit

Step 2: Push the motor unit as arrow show to remove it.

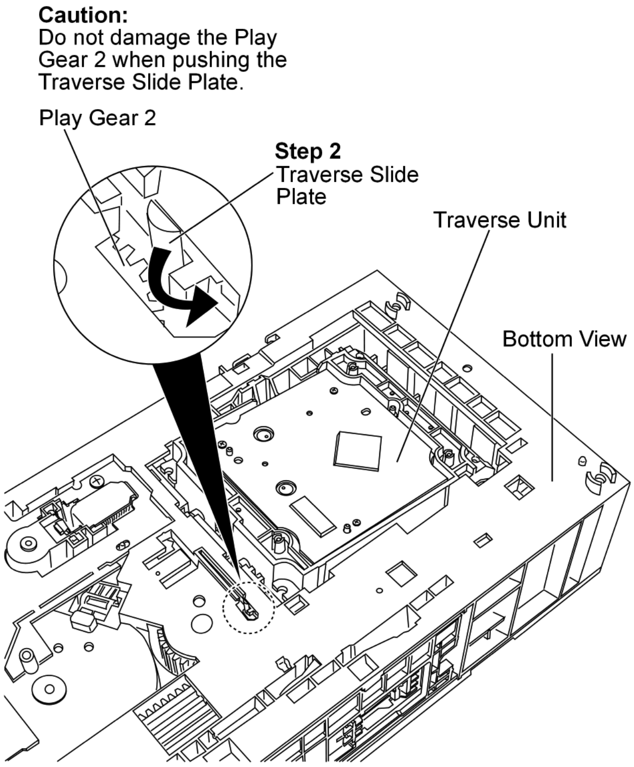
7.1.7. Disassembly of Traverse Unit

Important notes: Ensure all the trays are in the "STOCK" position before proceeding to the disassemble of traverse unit. For procedures to set the trays in "STOCK" position, please refer to (5. Troubleshooting Explorer)


Traverse Unit
2
1
Service Gear
Plunger Lever
Step 1

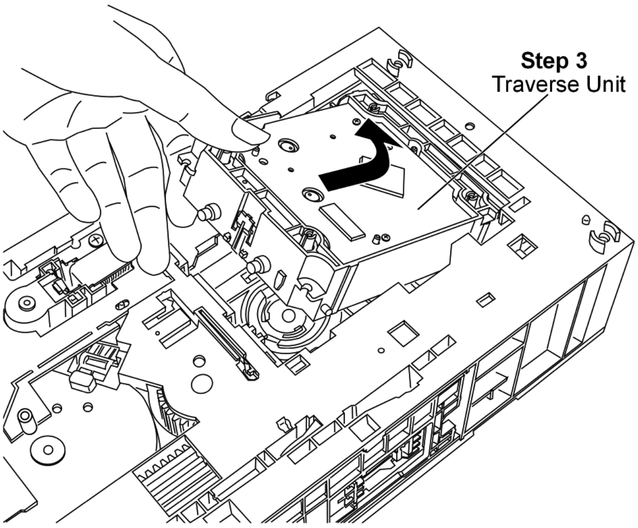
Note:
The traverse unit will move downwards stay in the "Home Position".

Step 1: Press and hold the plunger lever and rotate the gear as arrows shown until it stop.


Caution:
Do not damage the Play Gear 2 when pushing the Traverse Slide Plate.
Play Gear 2
Step 2
Traverse Slide Plate
Traverse Unit
Bottom View

Step 2: Push the traverse slide plate as arrow shown to release the traverse unit.

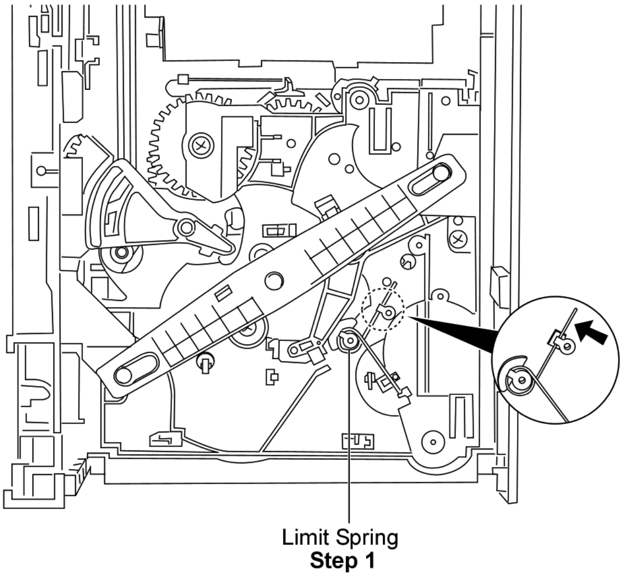
Caution: Do not exert strong force on the traverse slide plate.


Step 3
Traverse Unit

Step 3: Remove the traverse unit as arrow shown.

7.1.8. Disassembly of Limit Spring

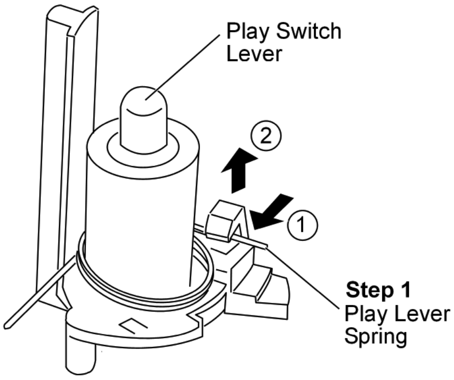
- Follow the (Step 1) to (Step 9) of item 7.1.1. (Disassembly of UD Base Assembly)


Limit Spring
Step 1

Step 1: Remove the limit spring as arrow shown.

7.1.9. Disassembly of Play Lever Spring

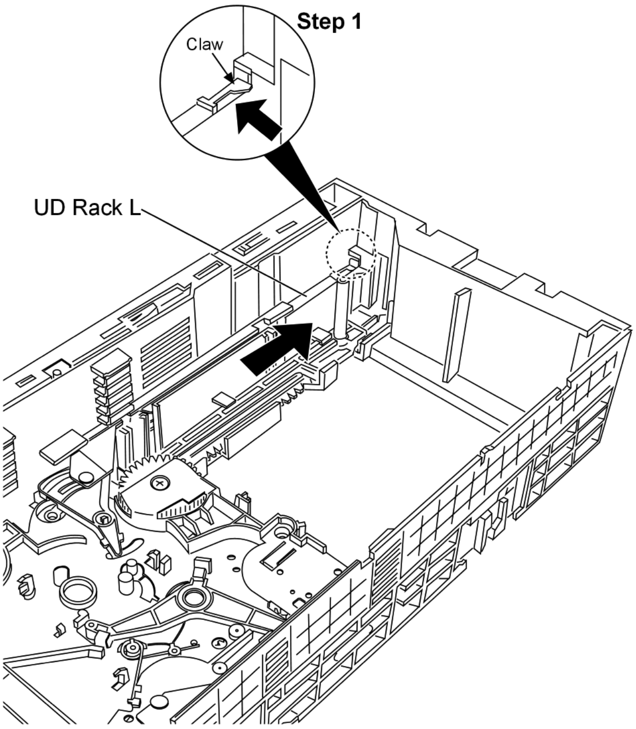
- Follow the (Step 1) to (Step 13) of item 7.1.1. (Disassembly of UD Base Assembly)
- Follow the (Step 1) to (Step 6) of item 7.1.2. (Disassembly of Disc Trays)
- Follow the (Step 1) to (Step 26) of item 7.1.3. (Disassembly of CD Loading Unit)


Play Switch Lever
②
①
Step 1
Play Lever Spring

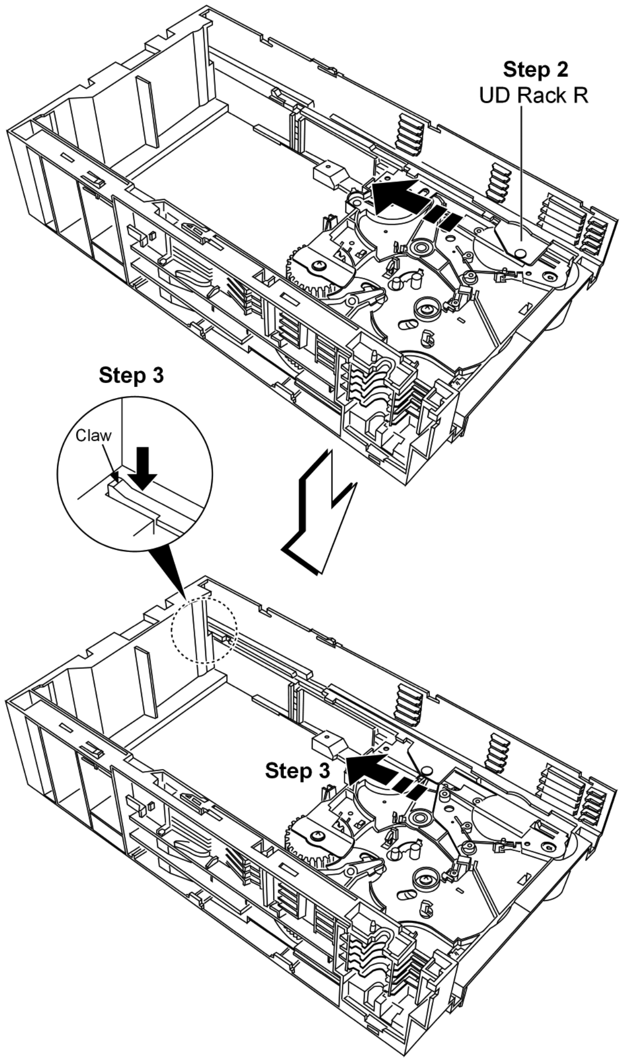
Step 1: Remove the play lever spring as arrow shown.

7.1.10. Disassembly of Pitch Plate Assembly

- Follow the (Step 1) to (Step 13) of item 7.1.1. (Disassembly of UD Base Assembly)
- Follow the (Step 1) to (Step 6) of item 7.1.2. (Disassembly of Disc Trays)
- Follow the (Step 1) to (Step 3) of item 7.1.3. (Disassembly of CD Loading Unit)

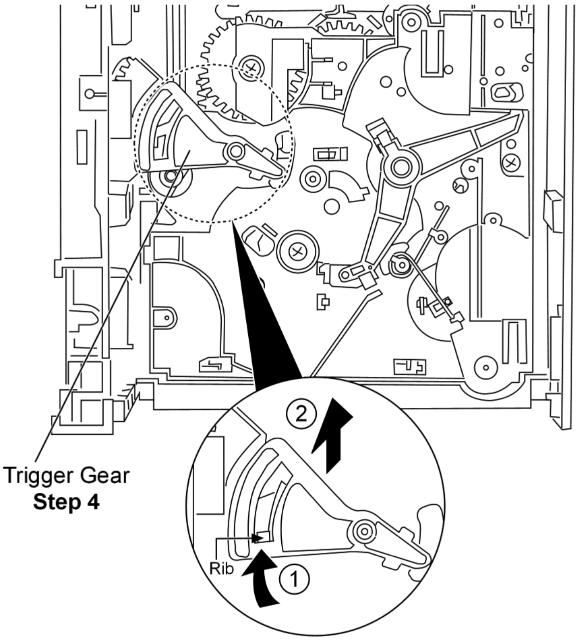

Step 1
Claw
UD Rack L

Step 1: Slide the UD rack L backwards, push the claw as arrow shown.

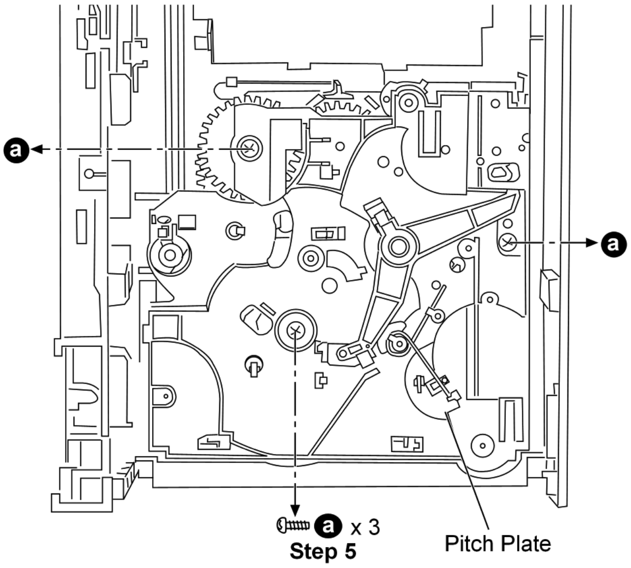

Step 2
UD Rack R
Step 3
Claw
Step 3

Step 2: Slide the UD rack R as arrow shown until it stop.

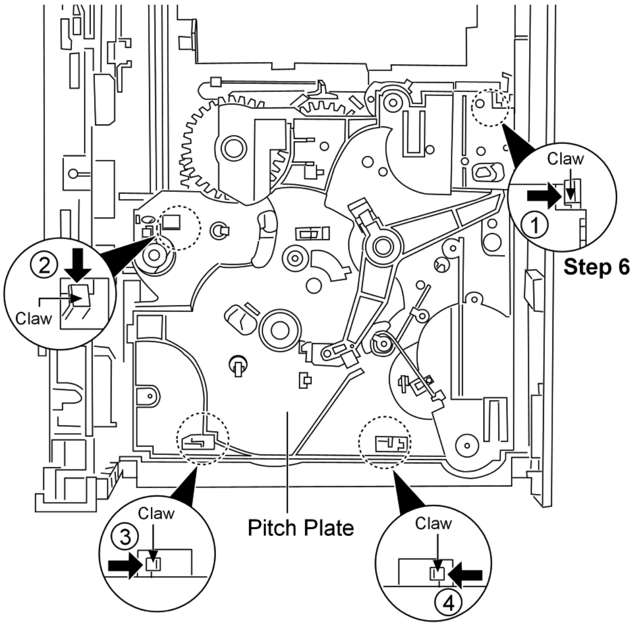
Step 3: Press the claw as arrow shown.


②
Trigger Gear
Step 4
Rib
①

Step 4: Push the claw as arrow shown, then turn the trigger gear clockwise and remove it as arrows shown.


a
a
a x 3
Step 5
Pitch Plate

Step 5: Remove 3 screws.

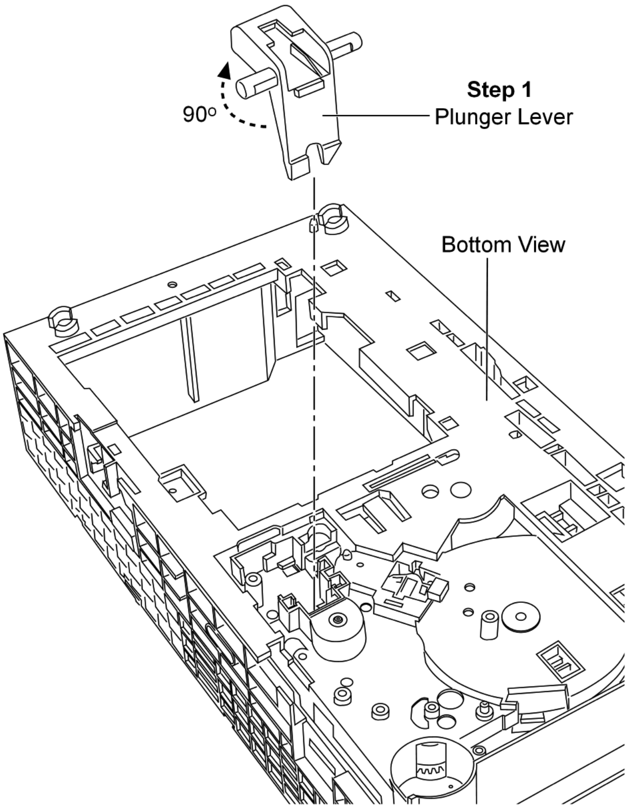

Claw
①
Step 6
②
Claw
Claw
③
Pitch Plate
Claw
④

Step 6: Release 4 claws as arrows shown in order followed by detach the pitch plate.

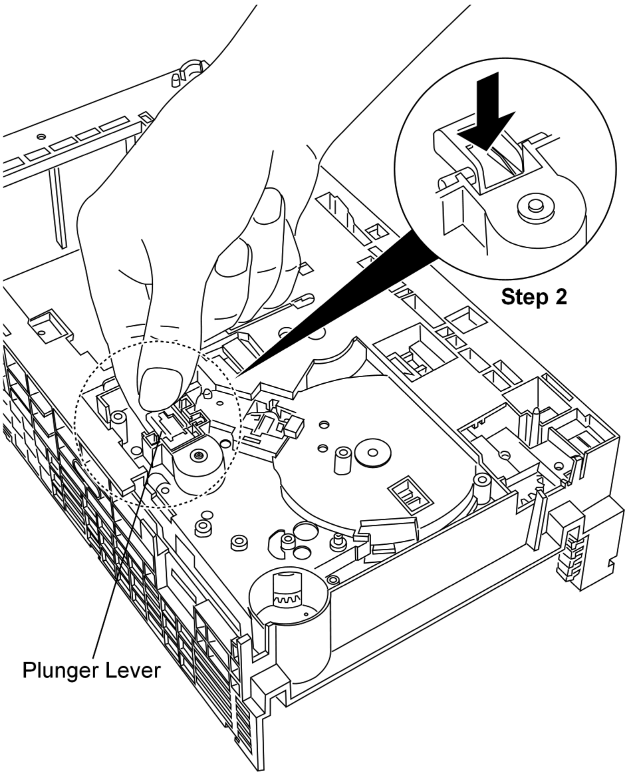
7.2. Assembling Procedure

7.2.1. Assembly of CD Loading Unit

· Assembly of Plunger Lever

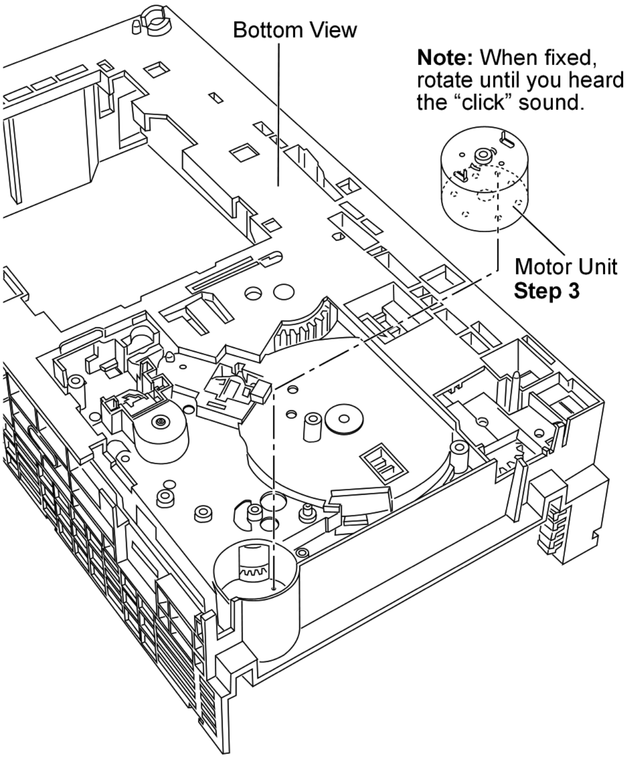

90°
Step 1
Plunger Lever
Bottom View

Step 1: Turn over the unit and install the plunger lever in 90° position.


Step 2
Plunger Lever

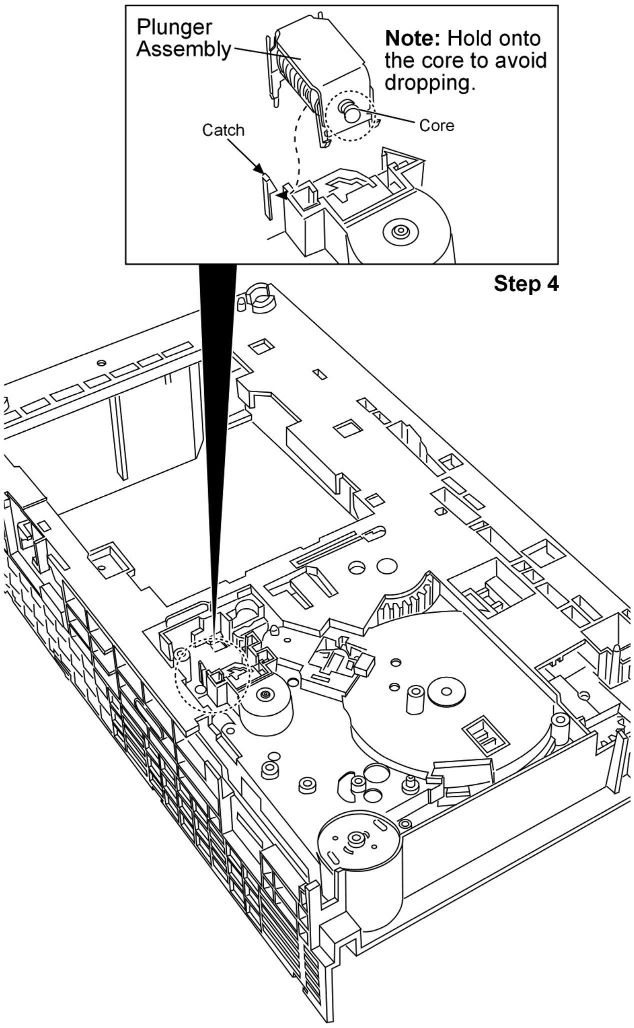
Step 2: Push in the plunger lever as arrow shown.

· Assembly of Motor Unit


Bottom View
Note: When fixed, rotate until you heard the “click” sound.
Motor Unit
Step 3

Step 3: Turn over the unit and install the motor unit properly.

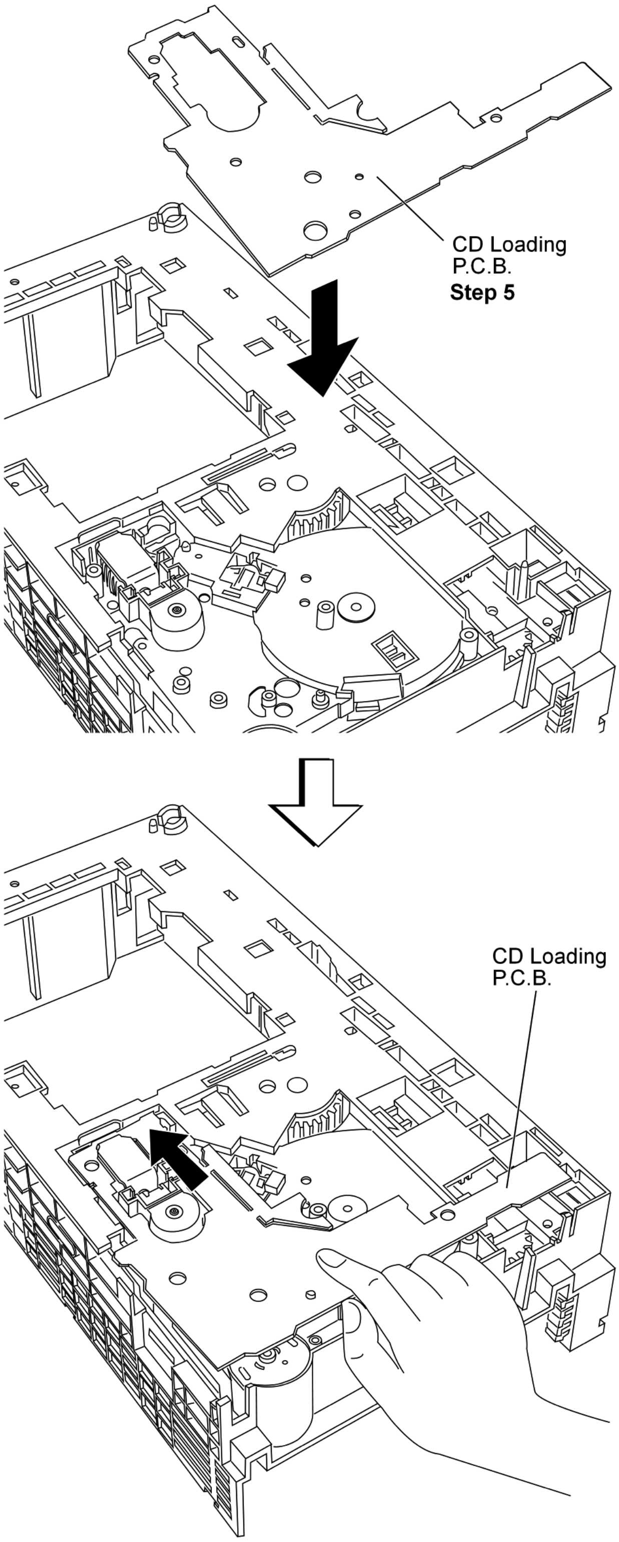
· Assembly of Plunger Assembly


Plunger Assembly
Catch
Core
Step 4

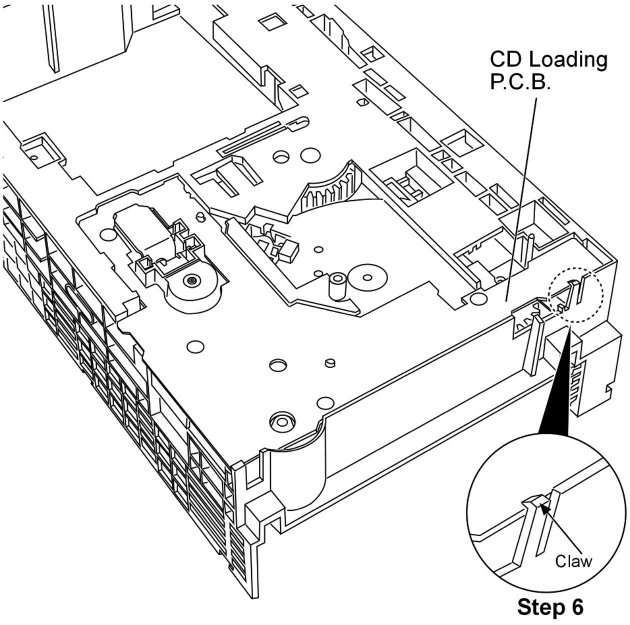
Note: Hold onto the core to avoid dropping.

Step 4: Install the plunger assembly as arrow shown, the catch should be latched.

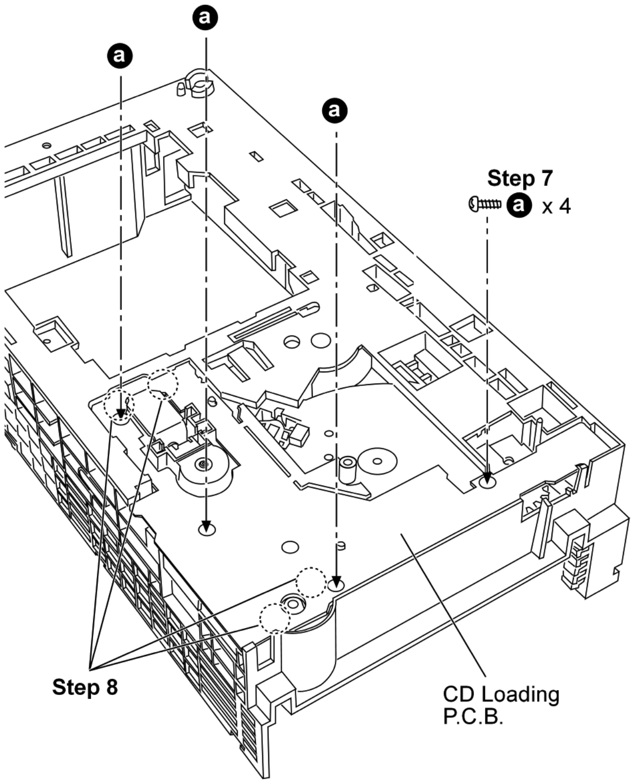
· Assembly of CD Loading P.C.B.


CD Loading P.C.B.
Step 5
CD Loading P.C.B.

Step 5: Install the CD Loading P.C.B. as arrows shown.


CD Loading
P.C.B.
Claw
Step 6

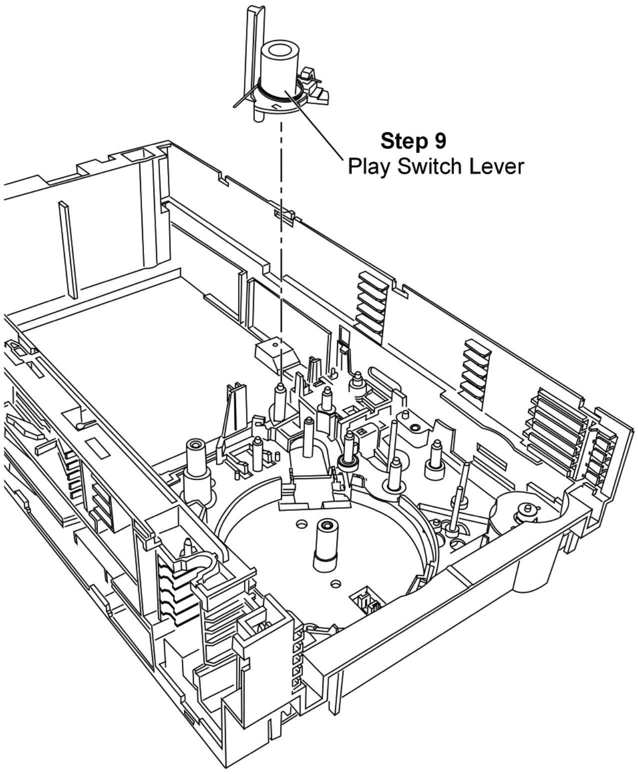
Step 6: The claw should be latched.


a
a
a
Step 7
a x 4
Step 8
CD Loading
P.C.B.

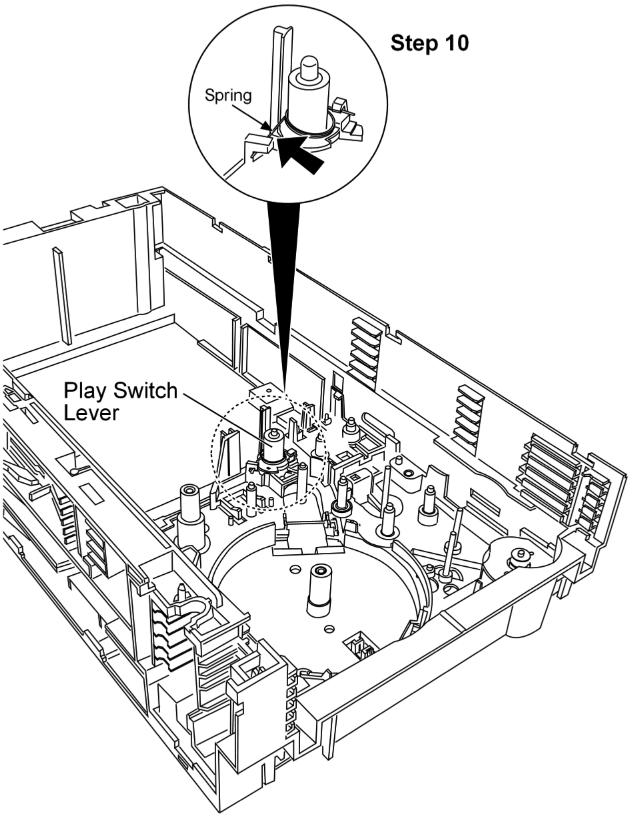
Step 7: Fix it with 4 screws.

Step 8: Solder the 4 points.

· Assembly of play swtich lever

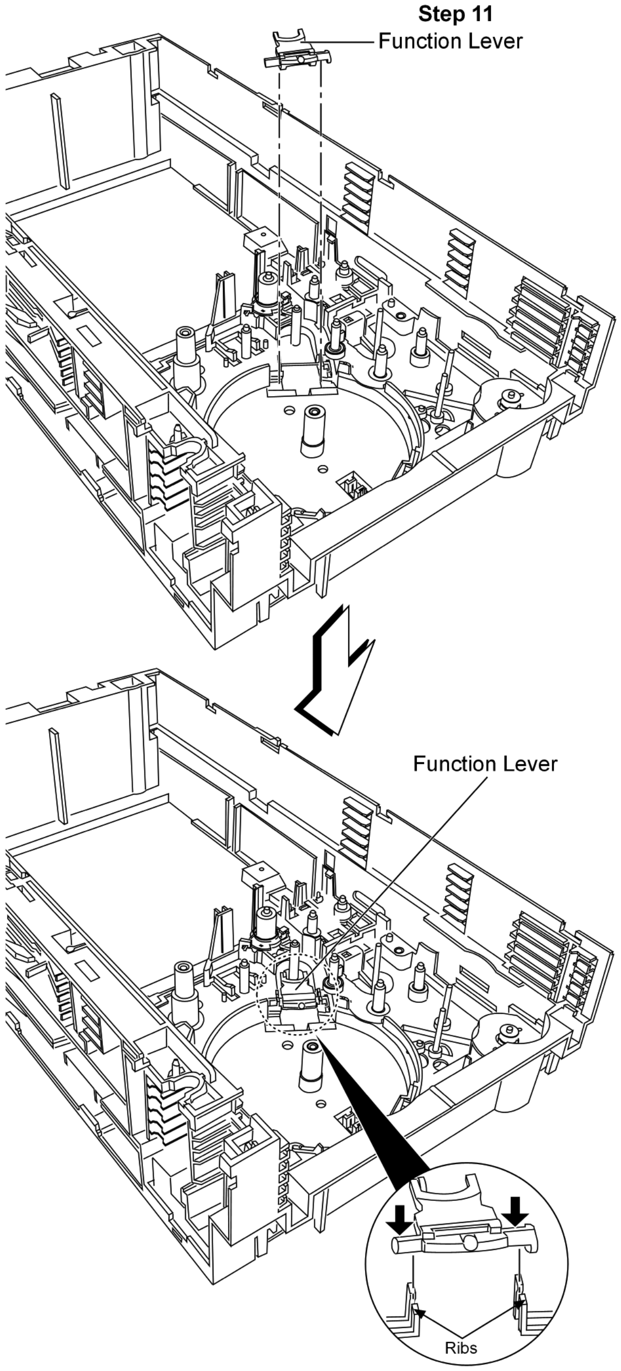

Step 9
Play Switch Lever

Step 9: Install the play switch lever.


Step 10
Spring
Play Switch
Lever

Step 10: Fix the spring below the rib as arrow shown.

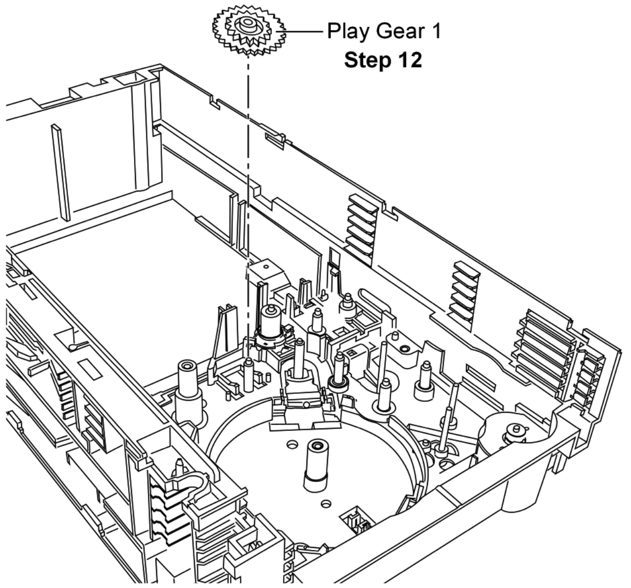
· Assembly of function lever

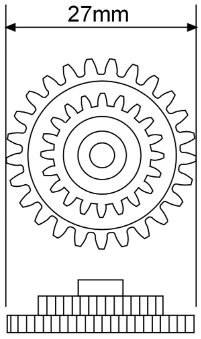

Step 11
Function Lever
Function Lever
Ribs

Step 11: Install the function lever.

Note: Ensure the function lever seats properly onto the ribs. A click sound will be heard when installing.

· Assembly of play gear 1

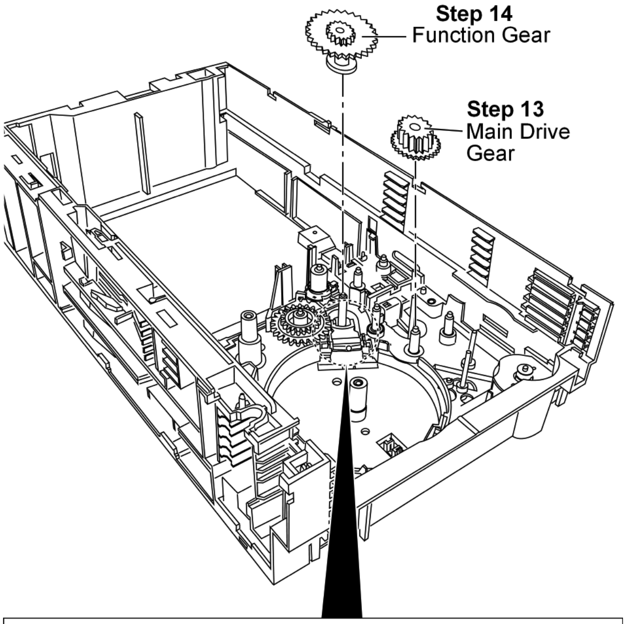

Play Gear 1
Step 12



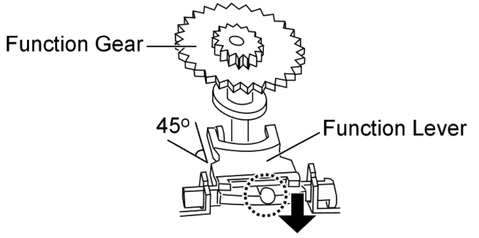
Play Gear 1

Step 12: Install the play gear 1.

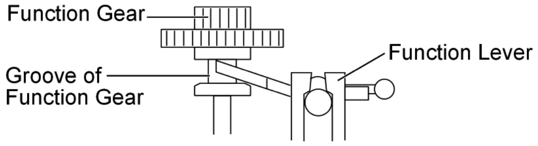
· Assembly of function gear and main drive gear

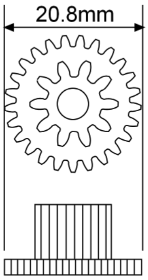

Step 14
Function Gear
Step 13
Main Drive
Gear

1. Press the ◌ part as arrow shown below and pull up the function lever 45°.

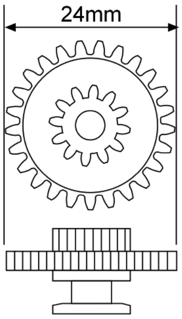

Function Gear
45°
Function Lever

2. Insert the function lever into the groove of function gear.


Function Gear
Function Lever
Groove of Function Gear



Main Drive Gear

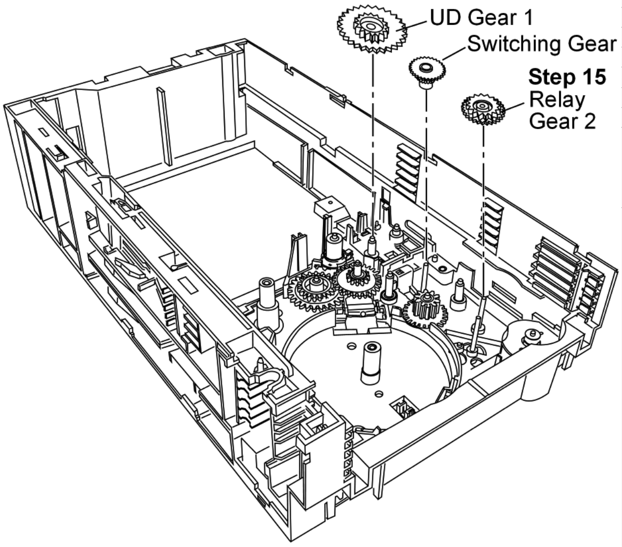


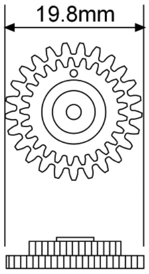
Function Gear

Step 13: Install the main drive gear.

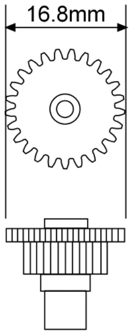
Step 14: Install the function gear.

· **Assembly of gears**

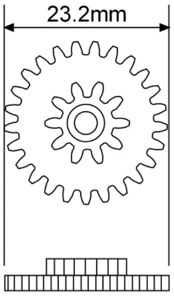

UD Gear 1
Switching Gear
Step 15
Relay
Gear 2



Relay Gear 2

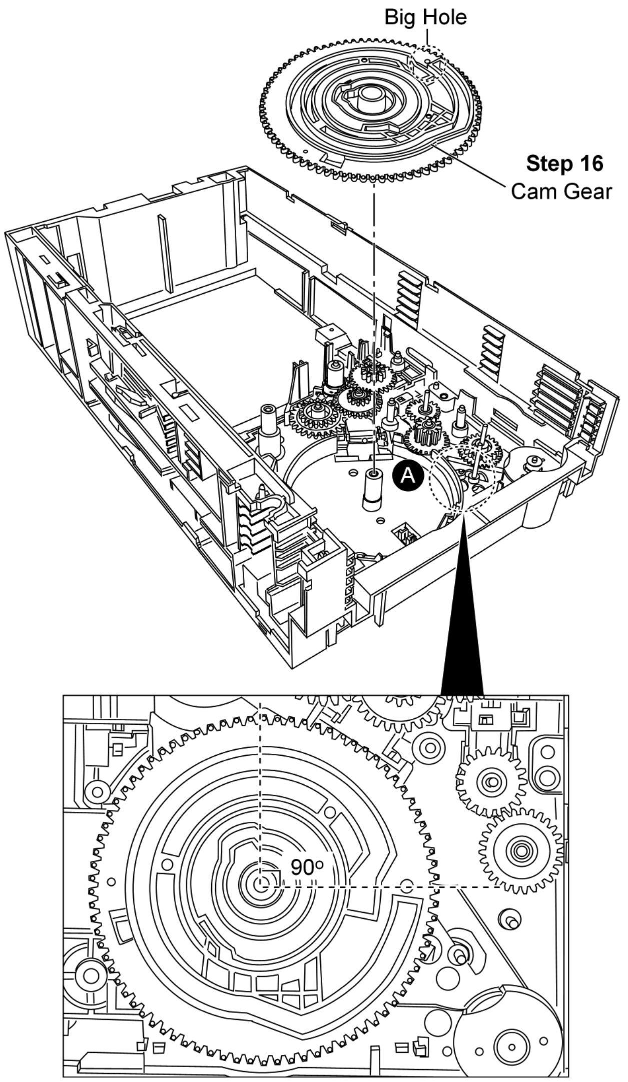


Switching Gear

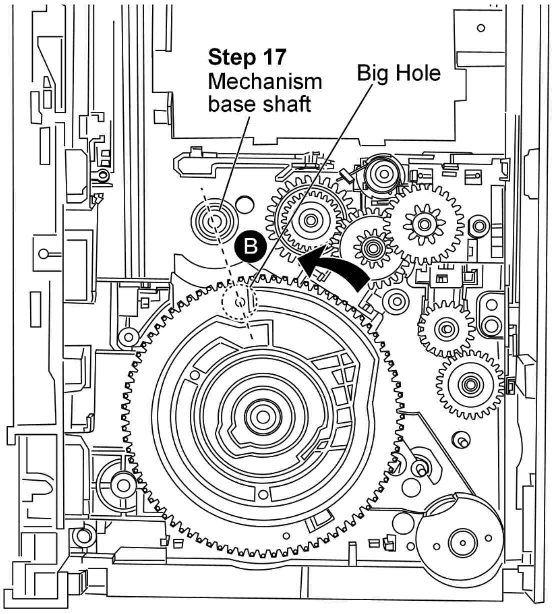


UD Gear 1

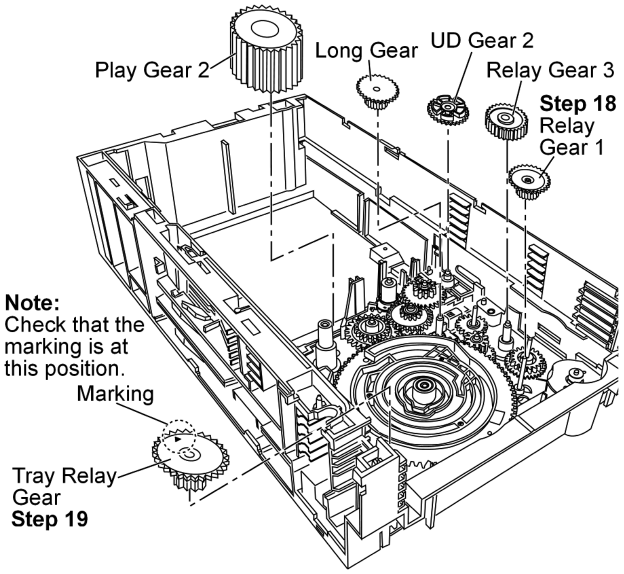
Step 15: Install the relay gear 2, switching gear and UD gear 1 respectively.


Big Hole
Step 16
Cam Gear
A
90°

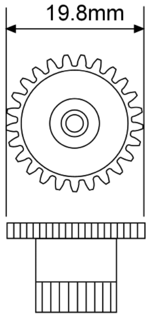
Step 16: Install the cam gear. Make sure the big hole is fix at the position (A) at 90°


Step 17
Mechanism base shaft
Big Hole
B

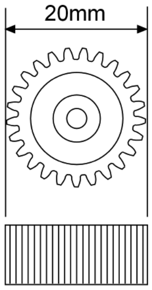
Step 17: Turn the cam gear anti-clockwise until the big hole stop at position (B).


Play Gear 2
Long Gear
UD Gear 2
Relay Gear 3
Step 18
Relay Gear 1
Marking
Tray Relay Gear
Step 19

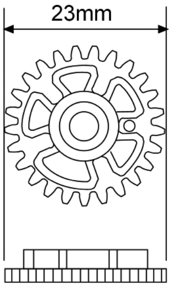
Note:
Check that the marking is at this position.



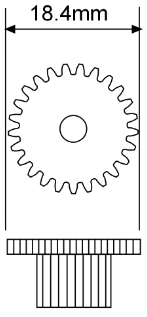
Relay Gear 1



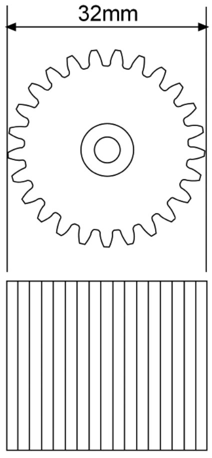
Relay Gear 3



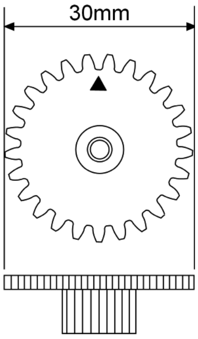
UD Gear 2



Long Gear



Play Gear 2

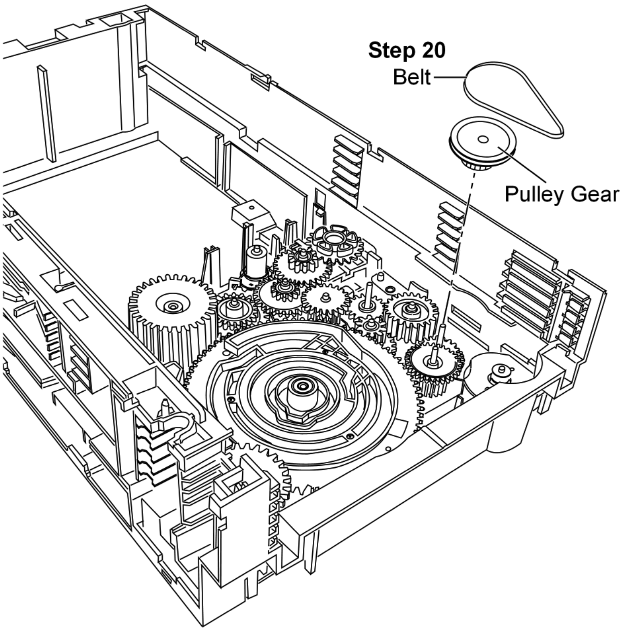


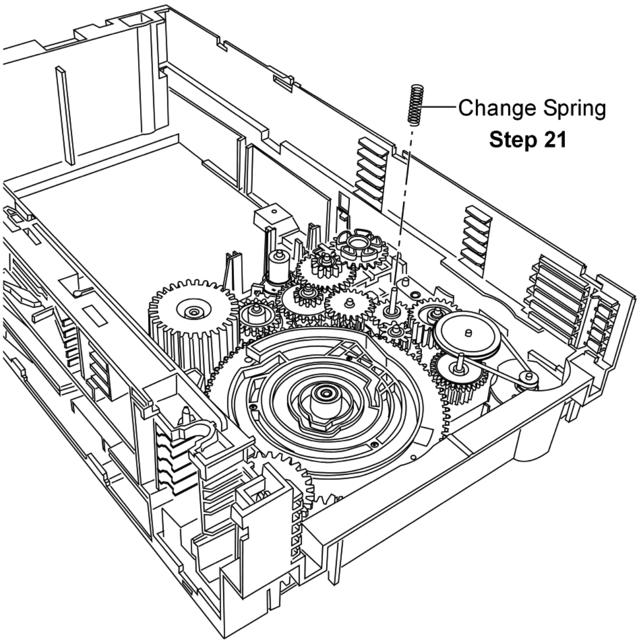
Tray Relay Gear

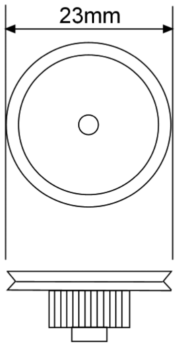
Step 18: Install the relay gear 1, relay gear 3, UD gear 2, long gear and play gear 2 respectively.

Step 19: Install the tray relay gear.

· **Assembly of pulley gear and belt**


Step 20
Belt
Pulley Gear


Change Spring
Step 21



Pulley Gear

Step 20: Install the pulley gear followed by the belt.

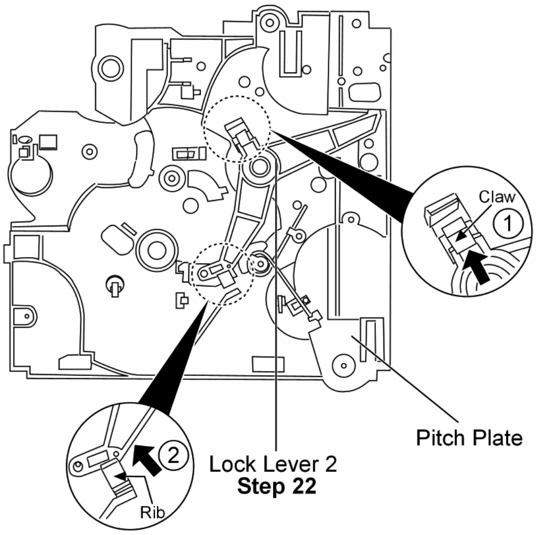
Note: Do not apply the grease to the belt.

· Assembly of change spring

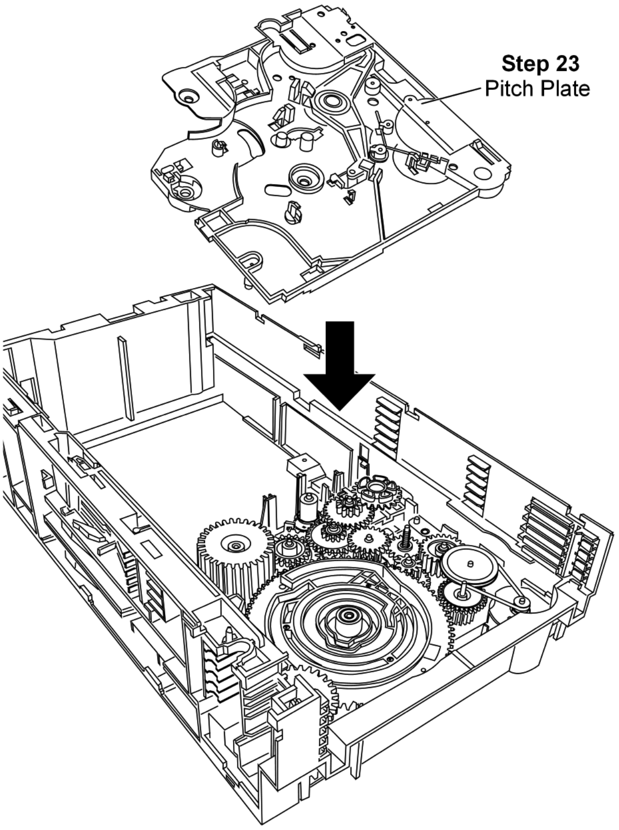
Step 21: Install the change spring.

Caution: Handle the change spring carefully, do not lose it. Ensure the change spring seats properly on the groove of long gear.

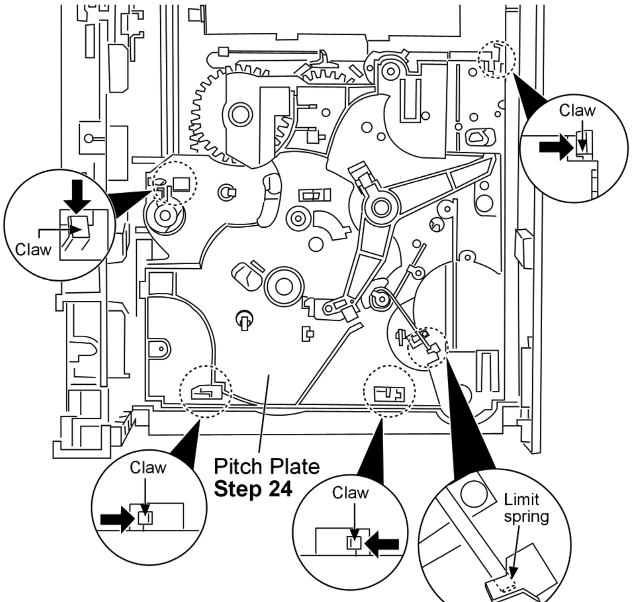
· Assembly of pitch plate


Claw
①
②
Rib
Lock Lever 2
Step 22
Pitch Plate

Step 22: Install the lock lever 2 as arrows whown in sequence.

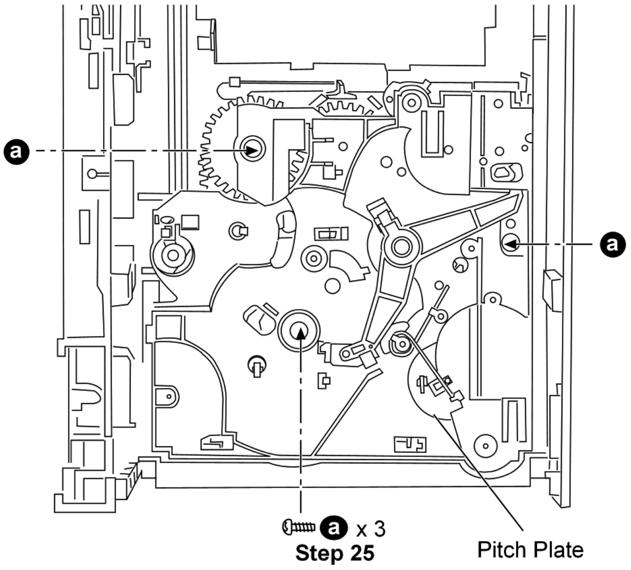

Step 23
Pitch Plate

Step 23: Install the pitch plate.


Claw
Claw
Claw
Claw
Pitch Plate
Step 24
Limit spring

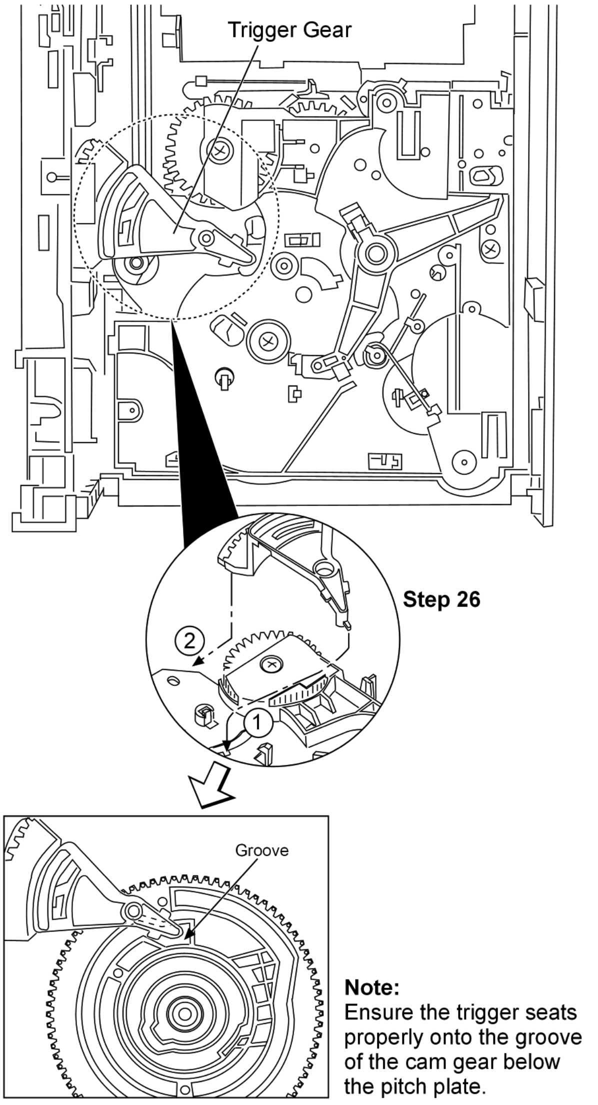
Note:
Check that the tip of the limit spring is hide under the pitch plate.

Step 24: The 4 claws should be latched properly.


a
a
a x 3
Step 25
Pitch Plate

Step 25: Fix it with 3 screws

· Assembly of trigger gear

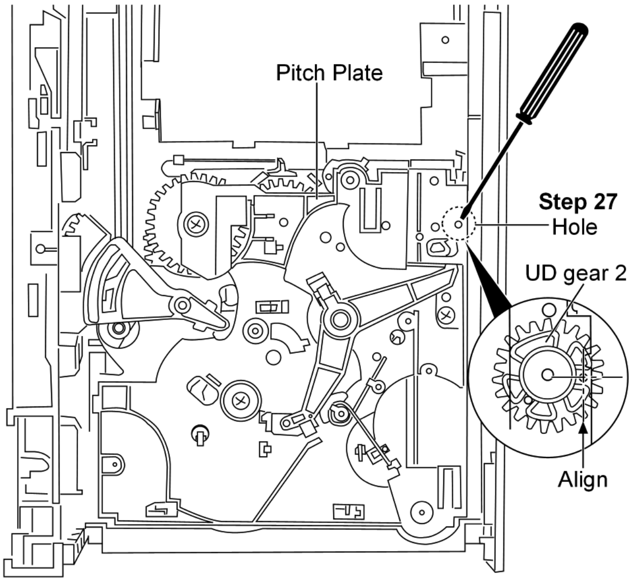

Trigger Gear
Step 26
2
1
Groove

Note:
Ensure the trigger seats properly onto the groove of the cam gear below the pitch plate.

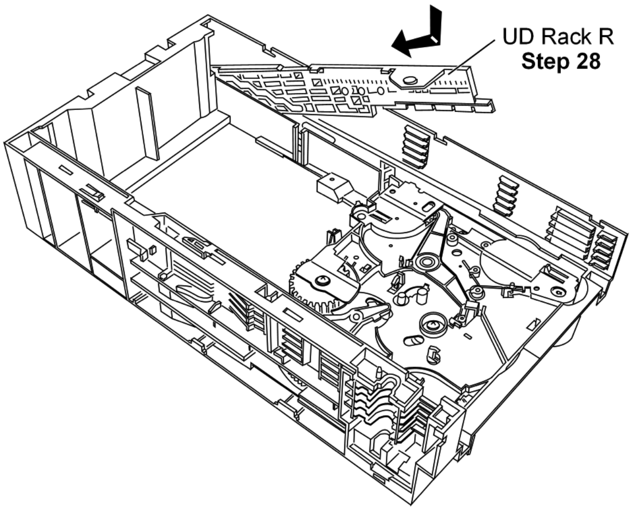
Step 26: Install the trigger gear in sequence.

Note: Ensure the trigger seats properly onto the groove (cam gear).

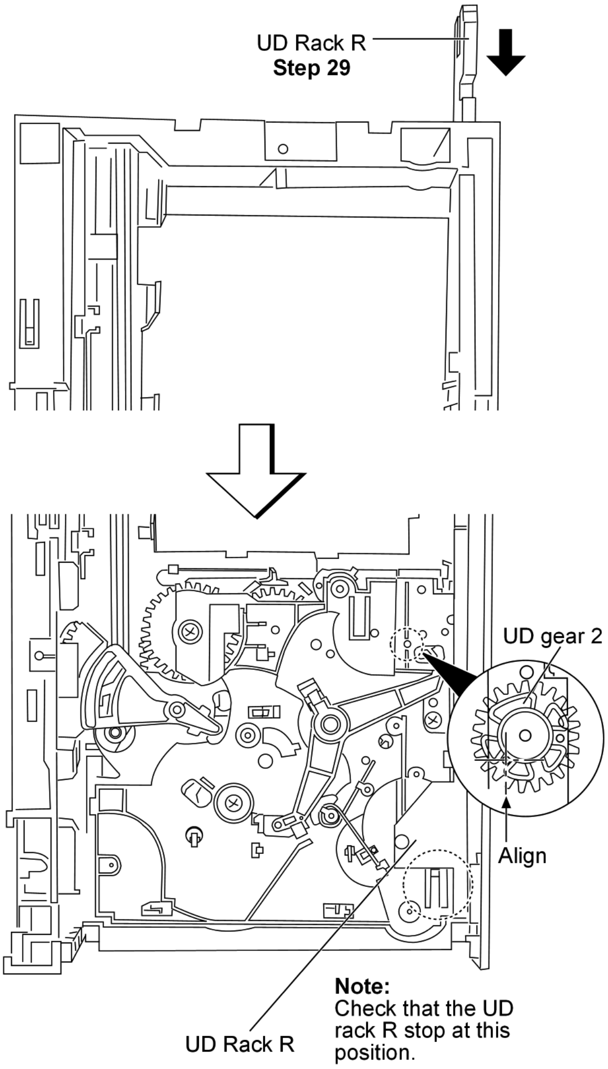
· Assembly of UD rack R


Pitch Plate
Step 27
Hole
UD gear 2
Align

Step 27: Use the screwdriver to turn the hole on the UD gear 2 align with the pitch plate hole.


UD Rack R
Step 28

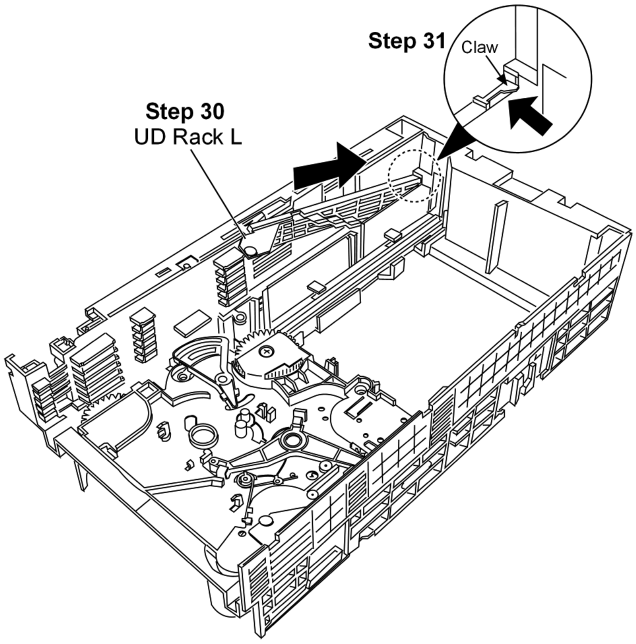
Step 28: Insert the UD rack R as arrow shown.


UD Rack R
Step 29
UD gear 2
Align
UD Rack R

Note:
Check that the UD rack R stop at this position.

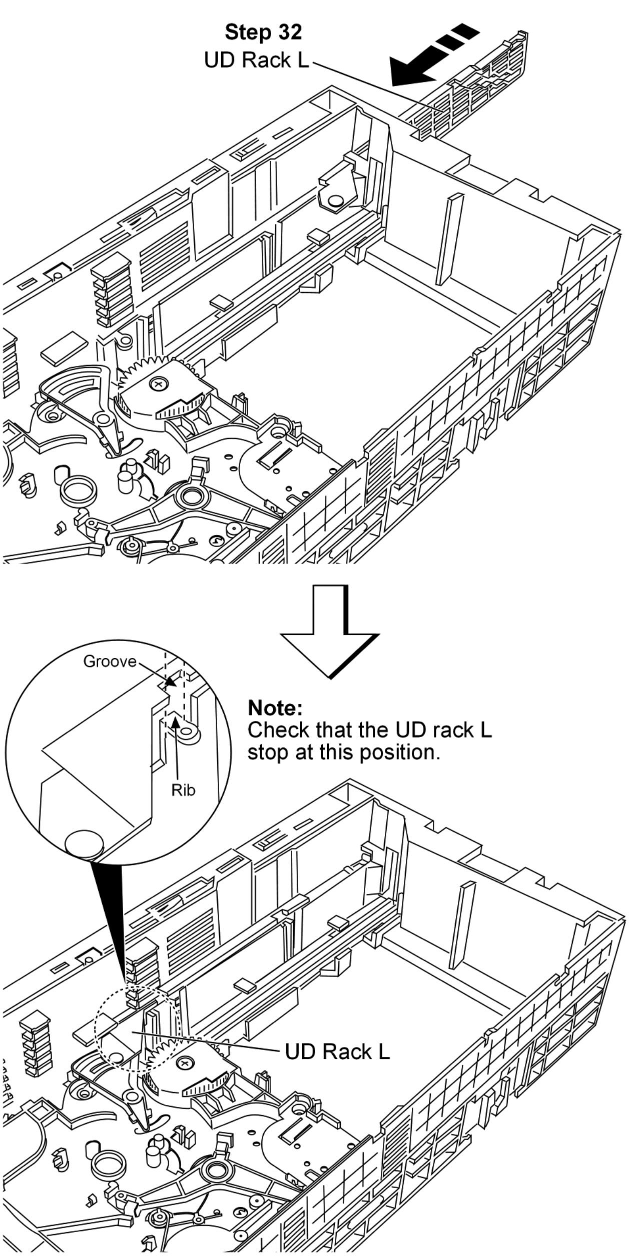
Step 29: Push the UD rack R as arrow shown.

· Assembly of UD rack L


Step 31
Claw
Step 30
UD Rack L

Step 30: Insert the UD rack L as arrow shown.

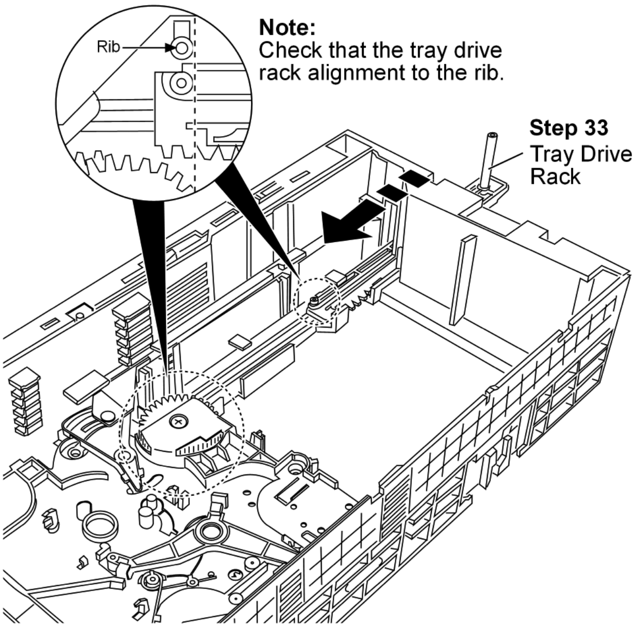
Step 31: Push the claw as arrow shown.


Step 32
UD Rack L
Groove
Rib
UD Rack L

Note:
Check that the UD rack L stop at this position.

Step 32: Pull the UD rack L as arrow shown.

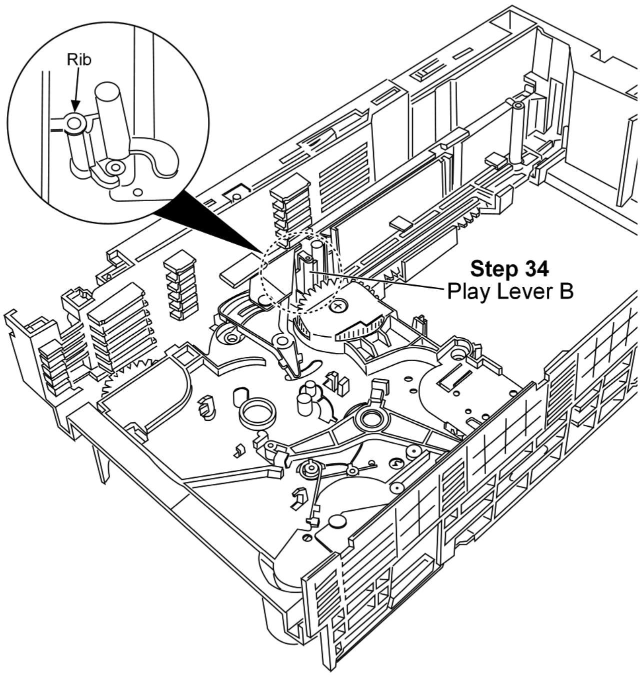
· Assembly of tray drive rack


Rib
Step 33
Tray Drive Rack

Note:
Check that the tray drive rack alignment to the rib.

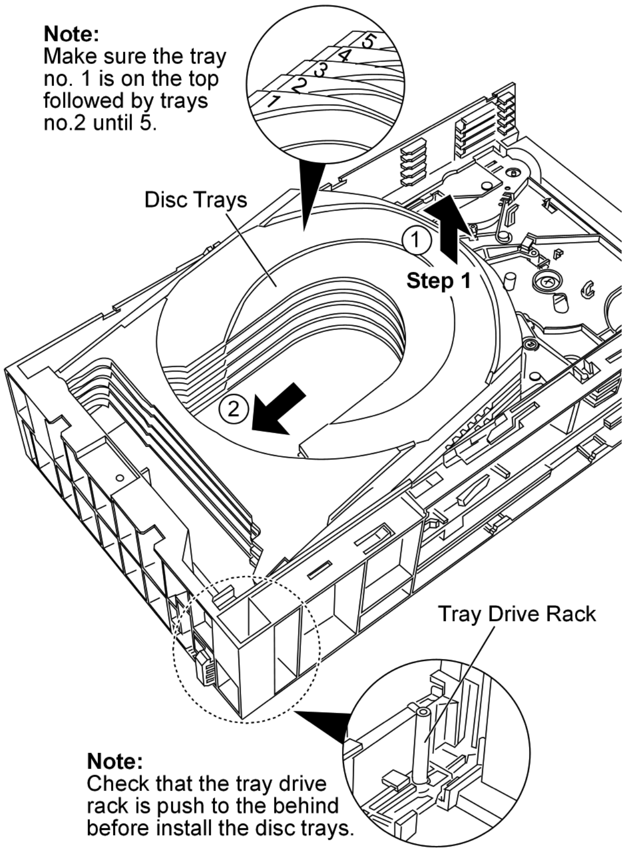
Step 33: Install the tray drive rack as arrow shown.

· Assembly of play lever B


Rib
Step 34
Play Lever B

Step 34: Install the play lever B below the rib.

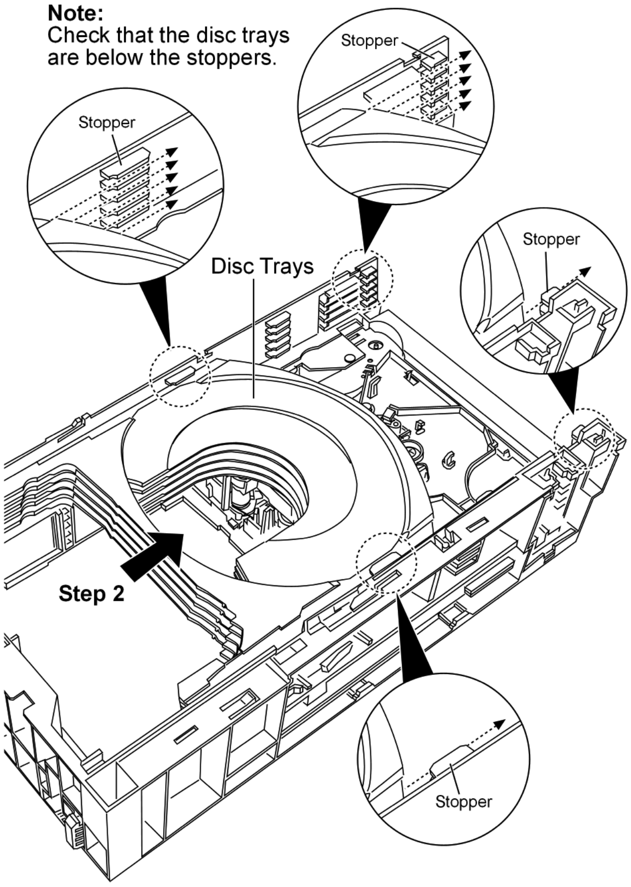
7.2.2. Assembly of Disc Trays


Note:
Make sure the tray no. 1 is on the top followed by trays no.2 until 5.

Note:
Check that the tray drive rack is push to the behind before install the disc trays.

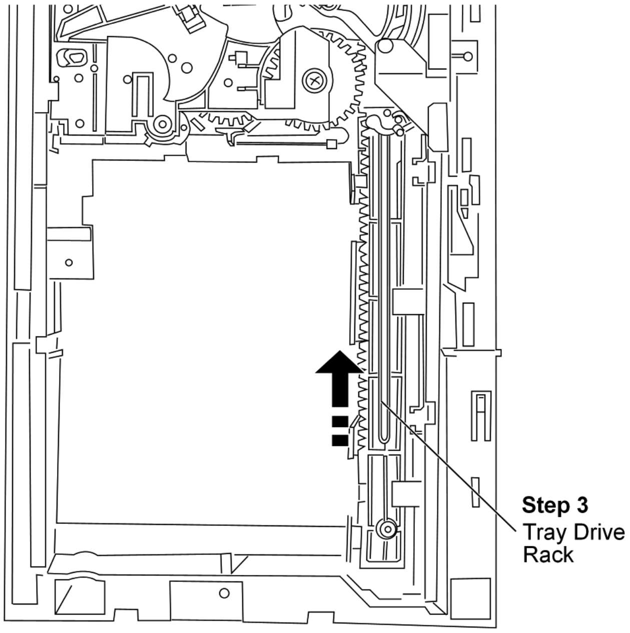
5
4
3
2
1
Disc Trays
①
Step 1
②
Tray Drive Rack

Step 1: Tilt and fix the 5 disc trays as arrows shown.


Note:
Check that the disc trays are below the stoppers.

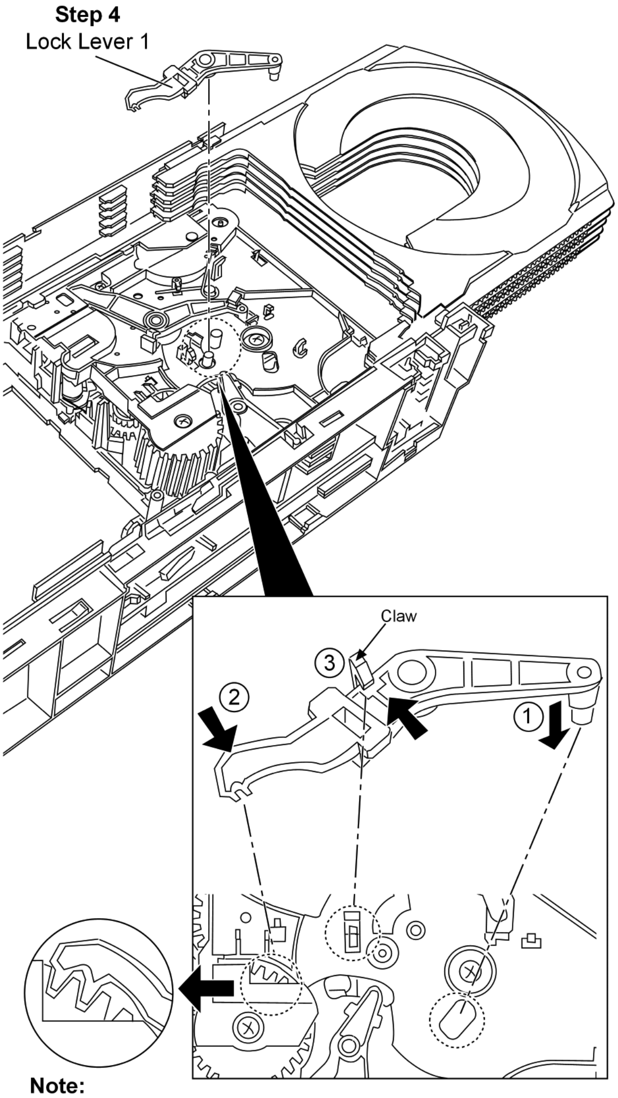
Stopper
Stopper
Disc Trays
Stopper
Step 2
Stopper

Step 2: Push the 5 disc trays as arrow shown until it stop.


Step 3
Tray Drive Rack

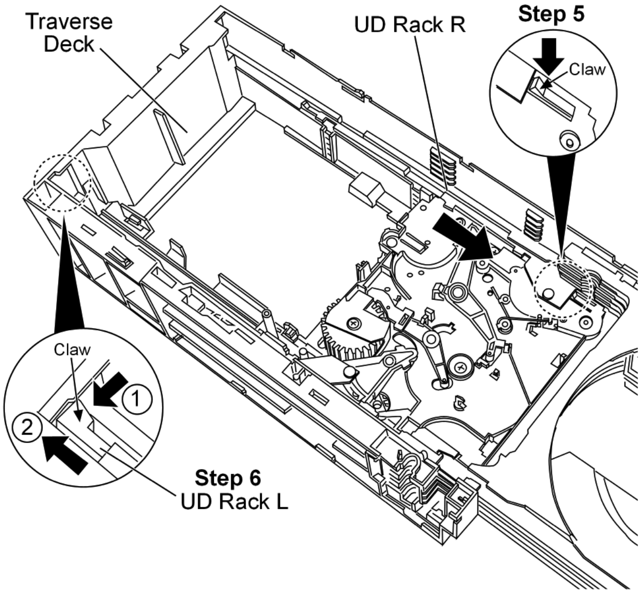
Step 3: Push the tray drive rack as arrow shown until it stop.

· **Assembly of lock lever 1**


Step 4
Lock Lever 1
Claw
③
②
①

Note:
Check that the lock lever 1
is alignment to the gear.

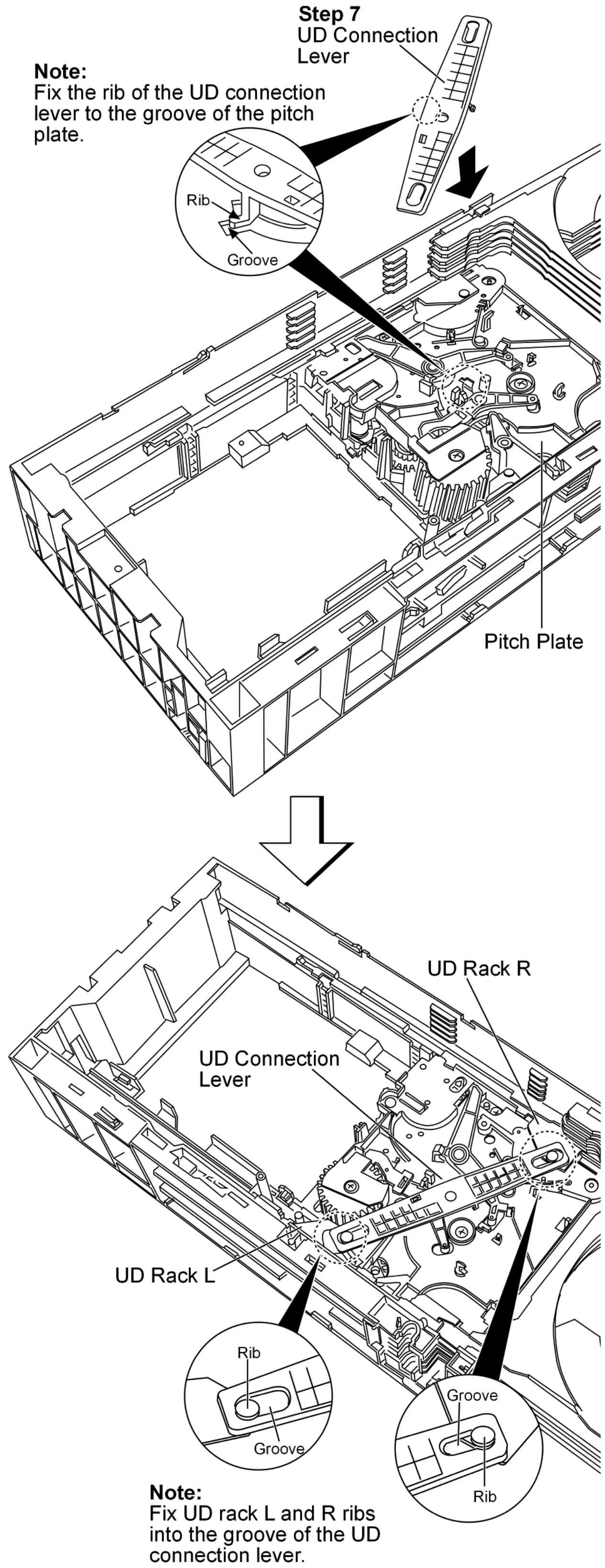
Step 4: Fix the lock lever 1 onto the pitch plate as arrow shown in sequence.


Traverse
Deck
UD Rack R
Step 5
Claw
Claw
①
②
Step 6
UD Rack L

Step 5: Press and hold the claw at the pitch plate then push the UD rack R as arrows shown.

Step 6: Push the claw and slide the UD rack L as arrows shown.

· **Assembly of UD connection lever**


Step 7
UD Connection Lever
Rib
Groove
Pitch Plate
UD Rack R
UD Connection Lever
UD Rack L
Rib
Groove
Groove
Rib

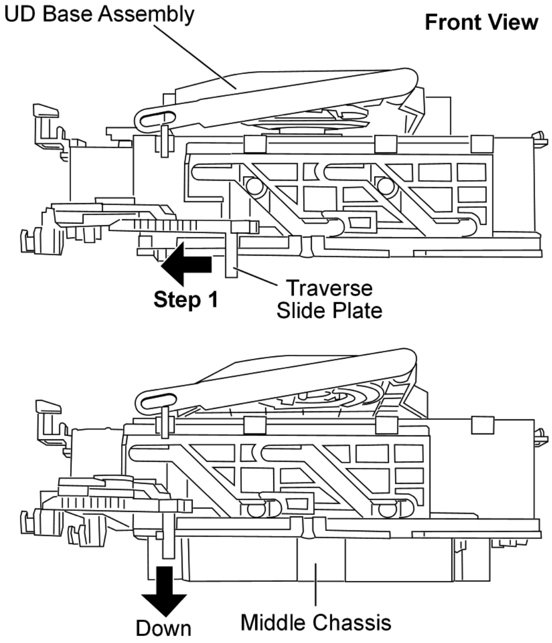
Note:
Fix the rib of the UD connection lever to the groove of the pitch plate.

Note:
Fix UD rack L and R ribs into the groove of the UD connection lever.

Step 7: Install the UD connection lever.

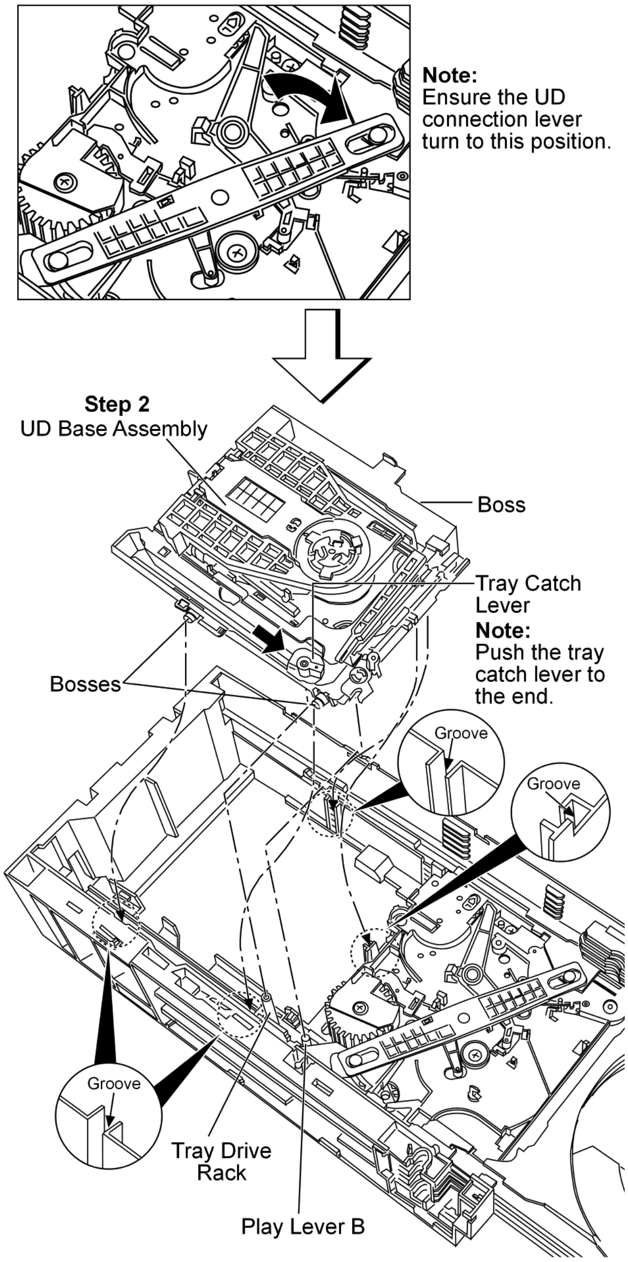
- Follow the (Step 1) to (Step 12) of item 7.2.3. (Assembly of UD Base Assembly)

7.2.3. Assembly of UD Base Assembly


UD Base Assembly
Front View
Step 1
Traverse Slide Plate
Down
Middle Chassis

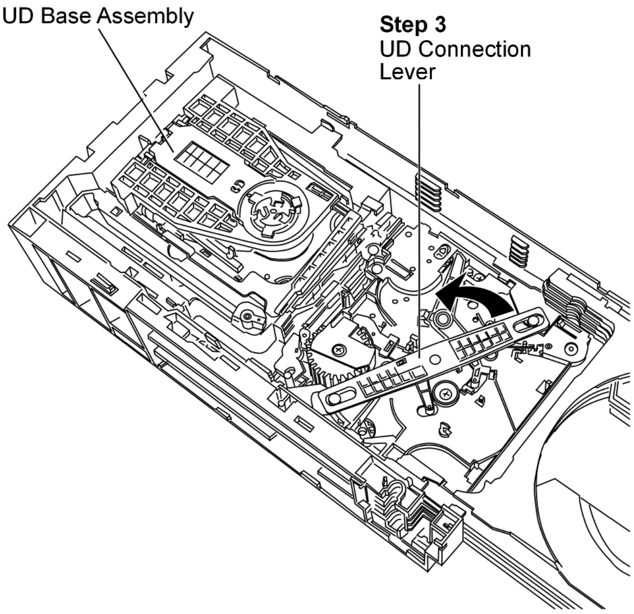
Note:
Check that the middle chassis is out of the unit.

Step 1: Push the traverse slide plate as arrow shown.


Note:
Ensure the UD connection lever turn to this position.
Step 2
UD Base Assembly
Boss
Tray Catch Lever
Note:
Push the tray catch lever to the end.
Bosses
Groove
Groove
Groove
Tray Drive Rack
Play Lever B

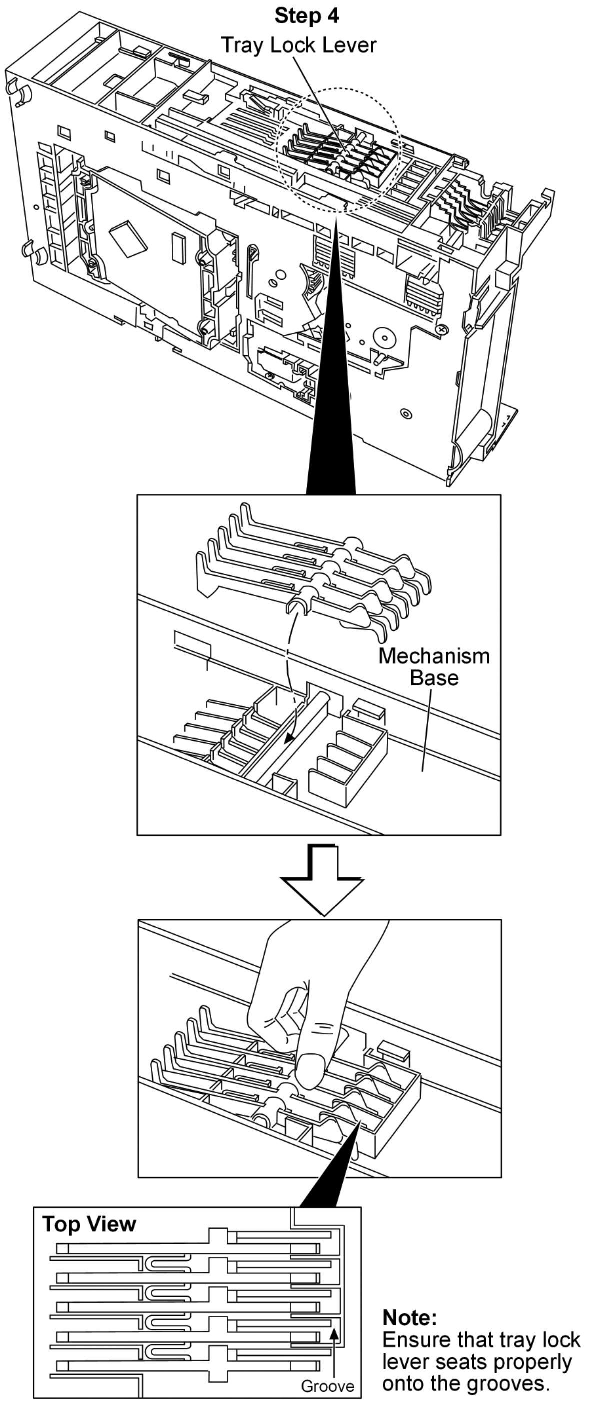
Step 2: Install the UD base assembly.

Note: Ensure the UD base assembly seats properly into the grooves and engage with the play lever B and tray drive rack.


UD Base Assembly
Step 3
UD Connection Lever

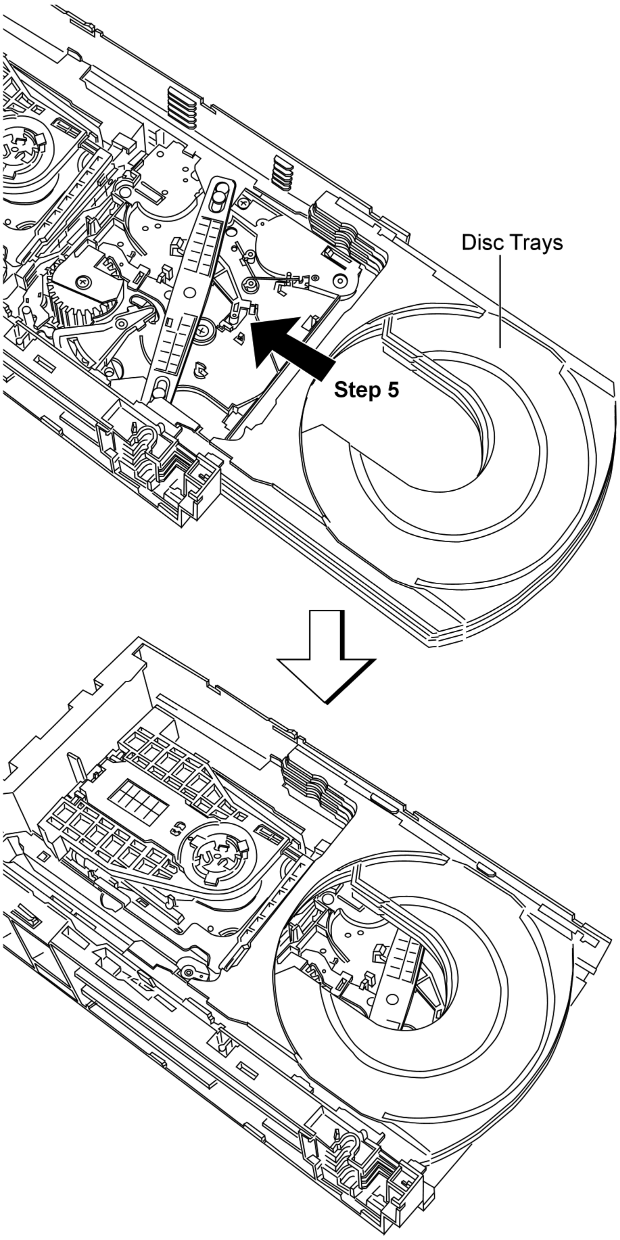
Step 3: Turn the UD connection lever anti-clockwise, the UD base assembly will move downwards.

Note: When the UD connection lever is turn and the UD base assembly did not move downwards, check for step 1 to step 3 again.


Step 4
Tray Lock Lever
Mechanism Base
Top View
Groove

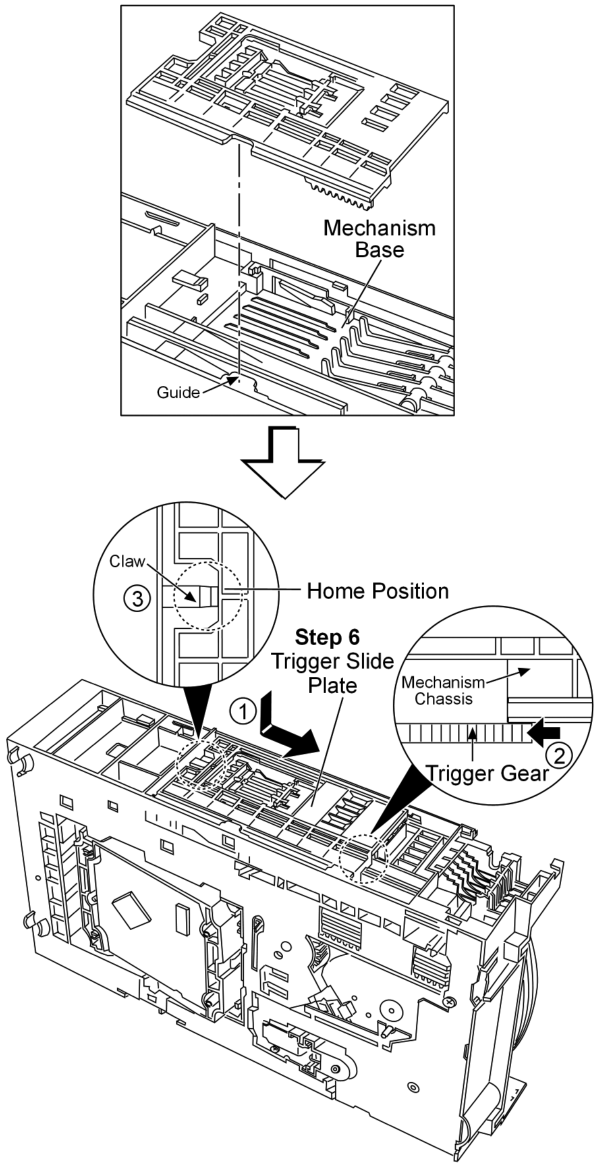
Note:
Ensure that tray lock lever seats properly onto the grooves.

Step 4: Install the tray lock lever to the mechanism base and push the tray lock lever with a hand to fix it.

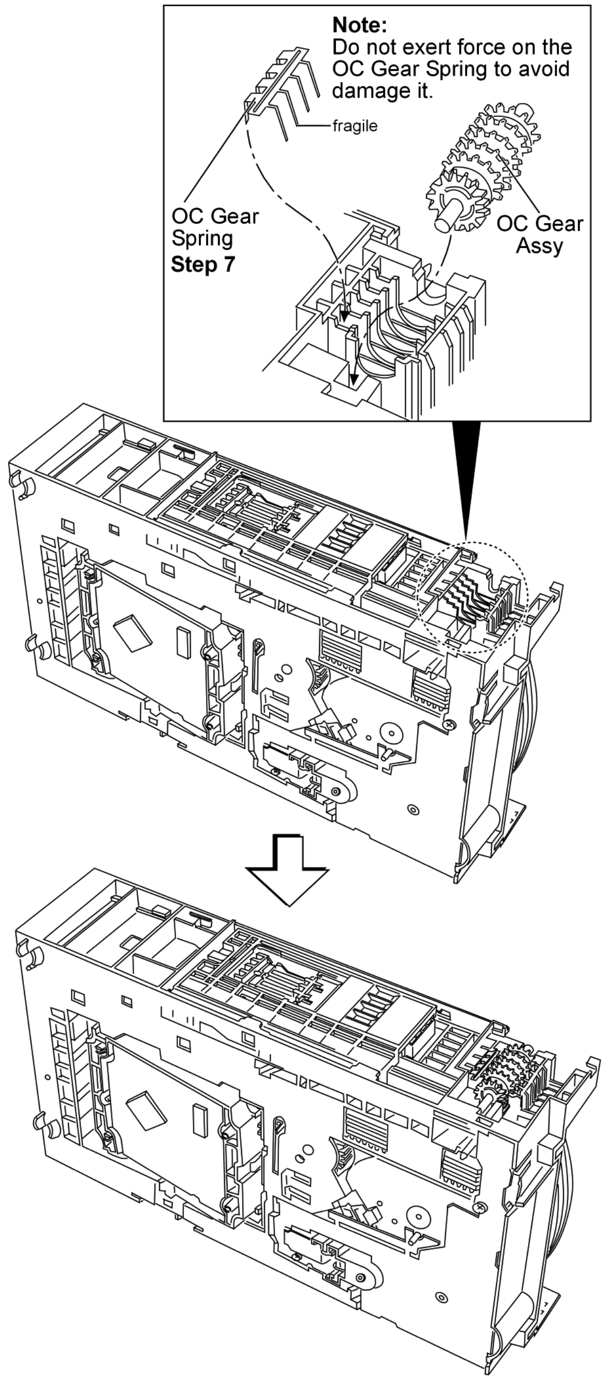

Disc Trays
Step 5

Step 5: Push the disc trays back to the unit as arrow shown.

· **Assembly of Trigger Slide Plate**

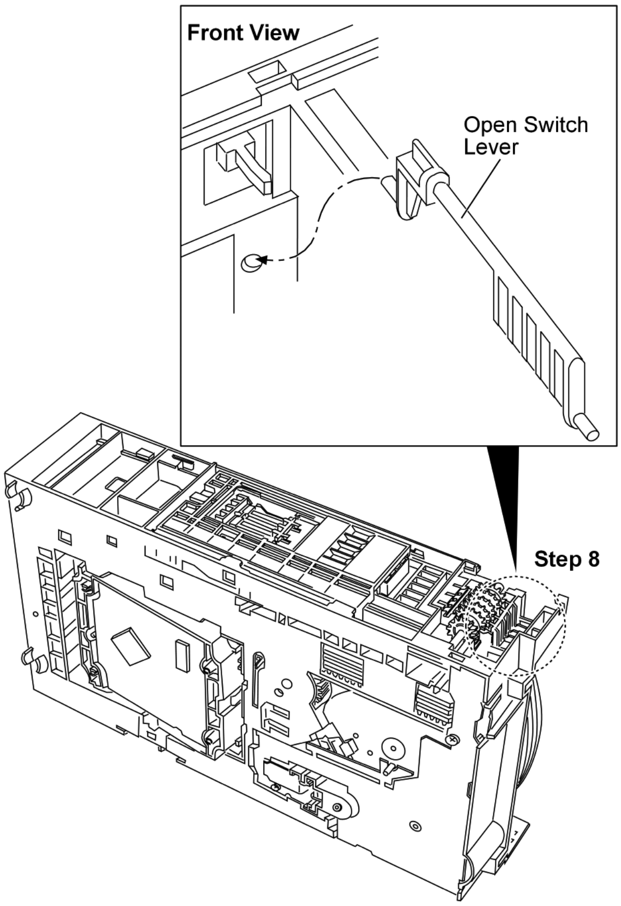

Mechanism
Base
Guide
Claw
③
Home Position
Step 6
Trigger Slide
Plate
①
Mechanism
Chassis
②
Trigger Gear

Step 6: Install the trigger slide plate, push forwards and push the trigger gear as arrows shown until locked by the claw.

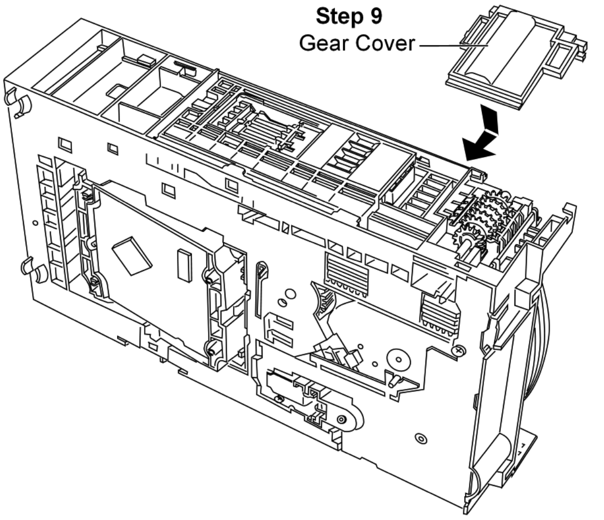

Note:
Do not exert force on the OC Gear Spring to avoid damage it.
fragile
OC Gear
Spring
Step 7
OC Gear
Assy

Step 7: Install the OC gear spring followed by the OC gear assy.

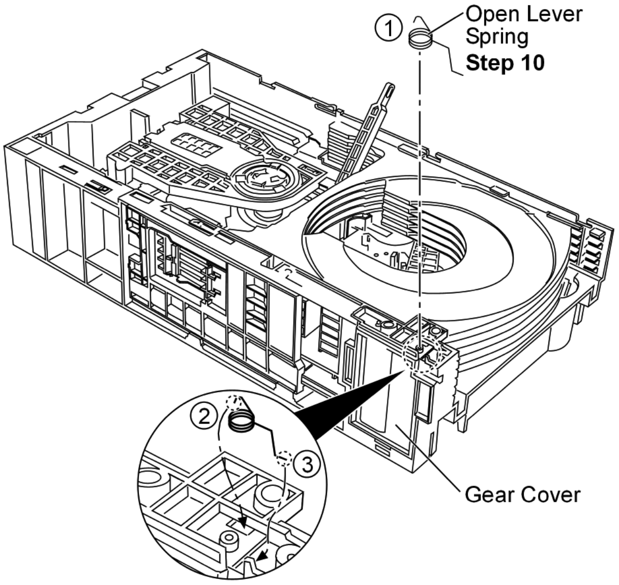
Caution: OC gear free to rotate after assembly


Front View
Open Switch Lever
Step 8

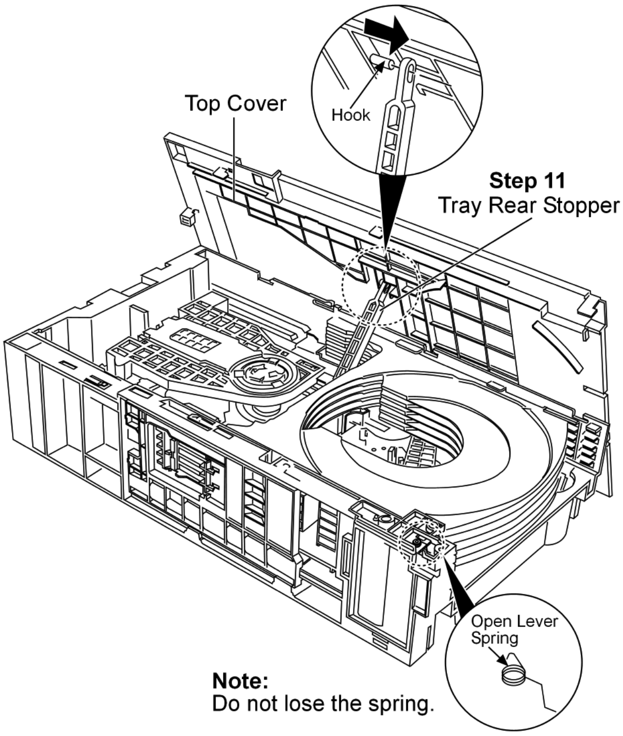
Step 8: Install the open switch lever.


Step 9
Gear Cover

Step 9: Install the gear cover as arrow shown.

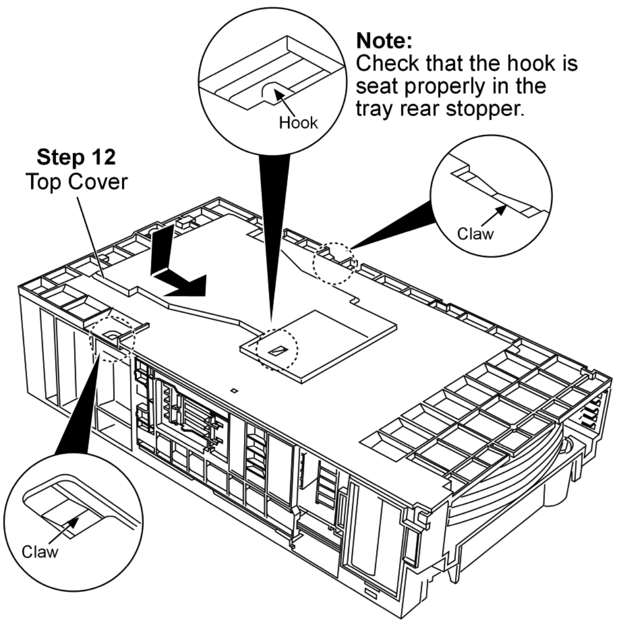

①
Open Lever Spring
Step 10
②
③
Gear Cover

Step 10: Install the open lever spring.


Top Cover
Hook
Step 11
Tray Rear Stopper
Open Lever Spring

Note:
Do not lose the spring.

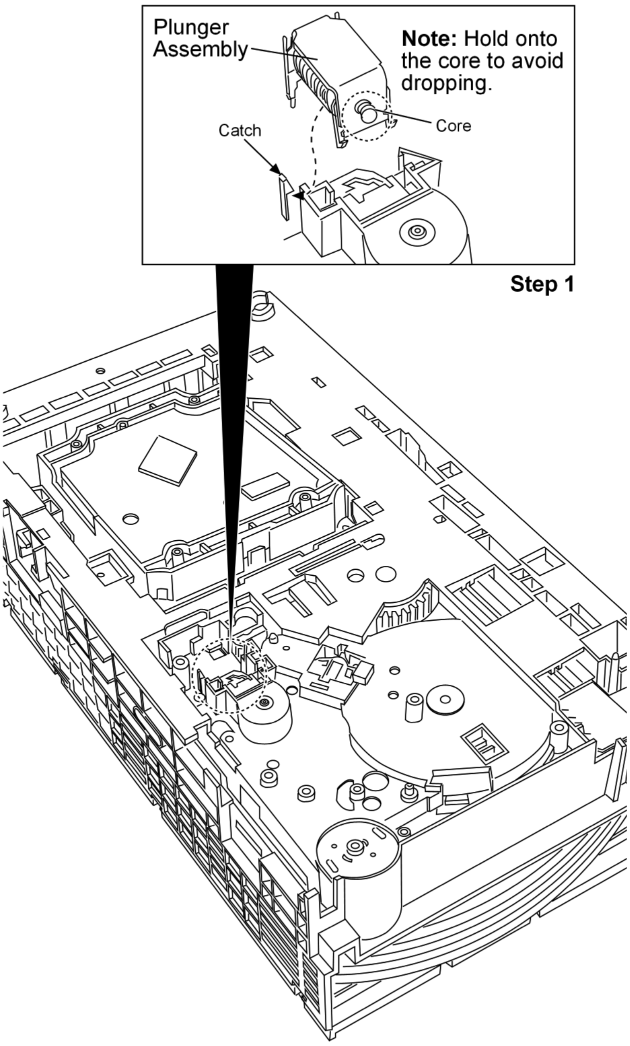
Step 11: Install the top cover, fix the top cover hook to the tray rear stopper as arrow shown.


Note:
Check that the hook is seat properly in the tray rear stopper.
Hook
Step 12
Top Cover
Claw
Claw

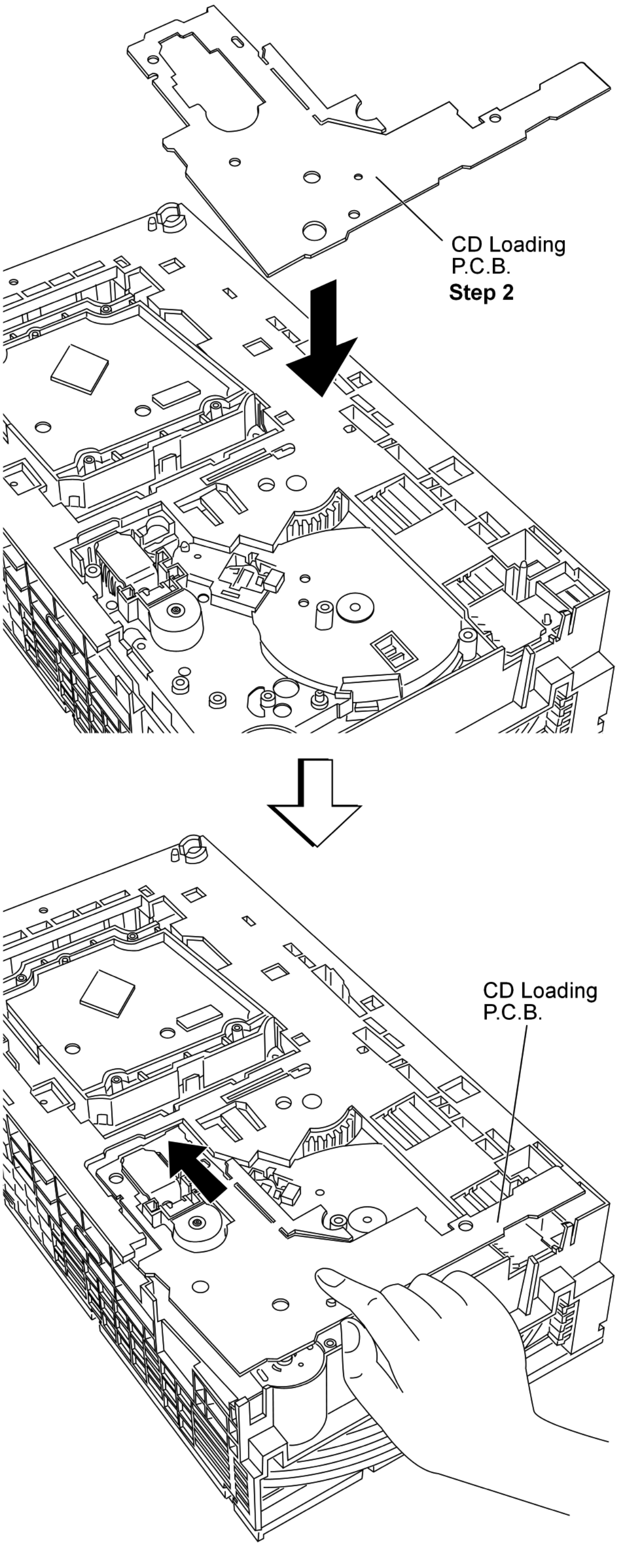
Step 12: Fix the top cover as arrow shown, the 2 claws should be latched.

The mechanism unit will be ready to be checked using service jig or be mounted to the main unit for checking.

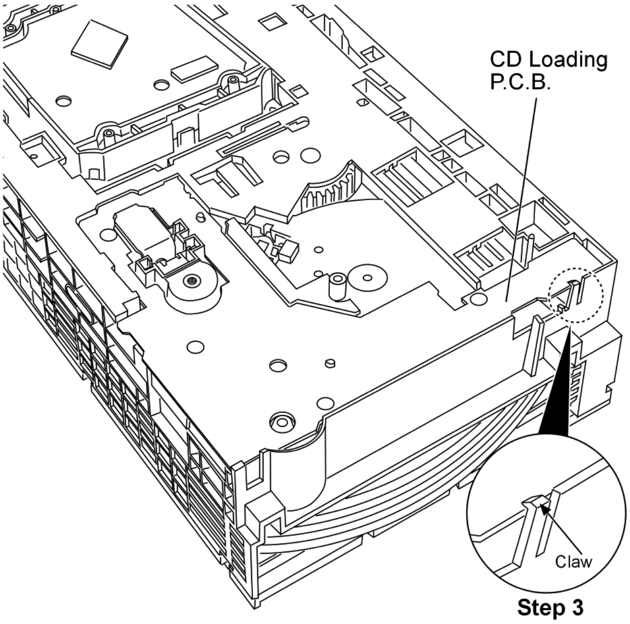
7.2.4. Assembly of CD Loading P.C.B.


Plunger Assembly
Note: Hold onto the core to avoid dropping.
Catch
Core
Step 1

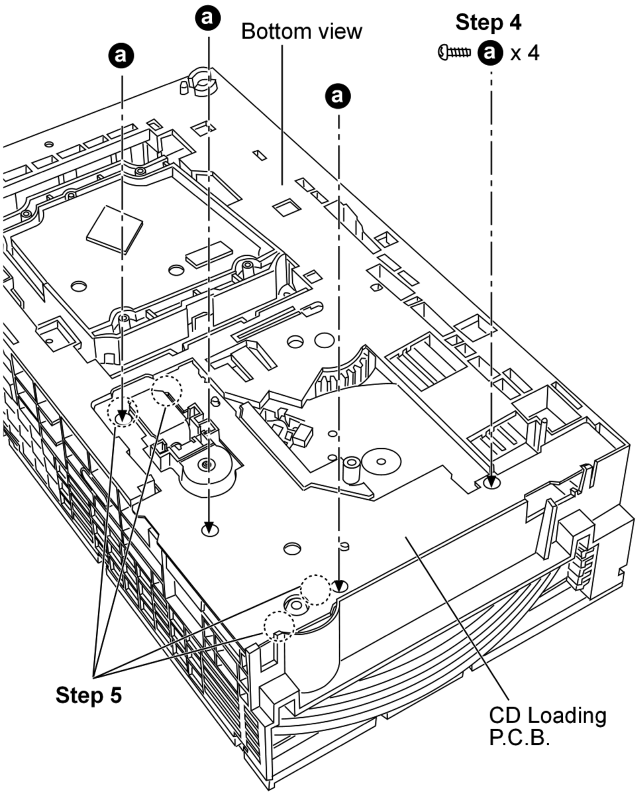
Step 1: Install the plunger assembly as arrow shown, the catch should be latched.


CD Loading
P.C.B.
Step 2
CD Loading
P.C.B.

Step 2: Install the CD Loading P.C.B. as arrows shown.


CD Loading
P.C.B.
Claw
Step 3

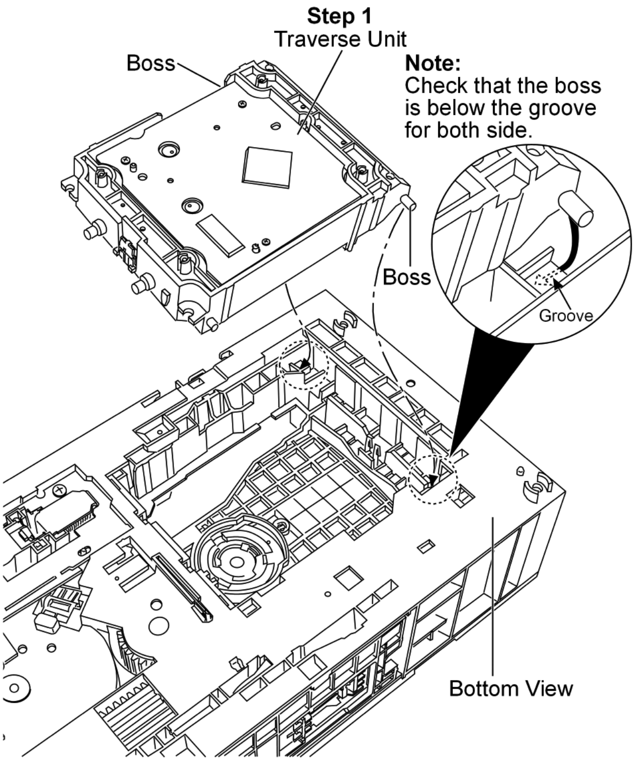
Step 3: The claw should be latched.


a
a
a
Bottom view
Step 4
a x 4
Step 5
CD Loading
P.C.B.

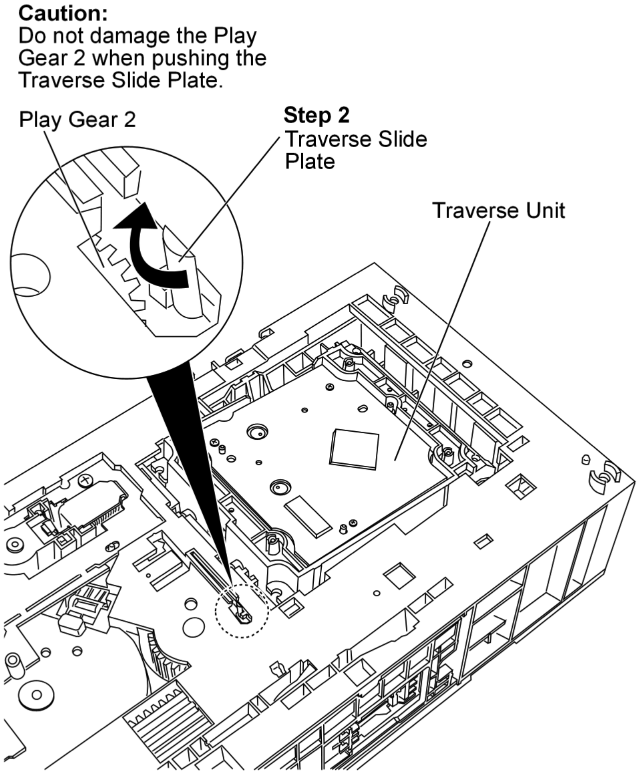
Step 4: Fix it with 4 screws.

Step 5: Solder the 4 points.

7.2.5. Assembly of Traverse Unit


Step 1
Traverse Unit
Boss
Note:
Check that the boss
is below the groove
for both side.
Boss
Groove
Bottom View

Step 1: Turn over the unit and install the traverse unit.


Caution:
Do not damage the Play
Gear 2 when pushing the
Traverse Slide Plate.
Play Gear 2
Step 2
Traverse Slide
Plate
Traverse Unit

Step 2: Push the traverse slide plate as arrow shown to lock the traverse unit.

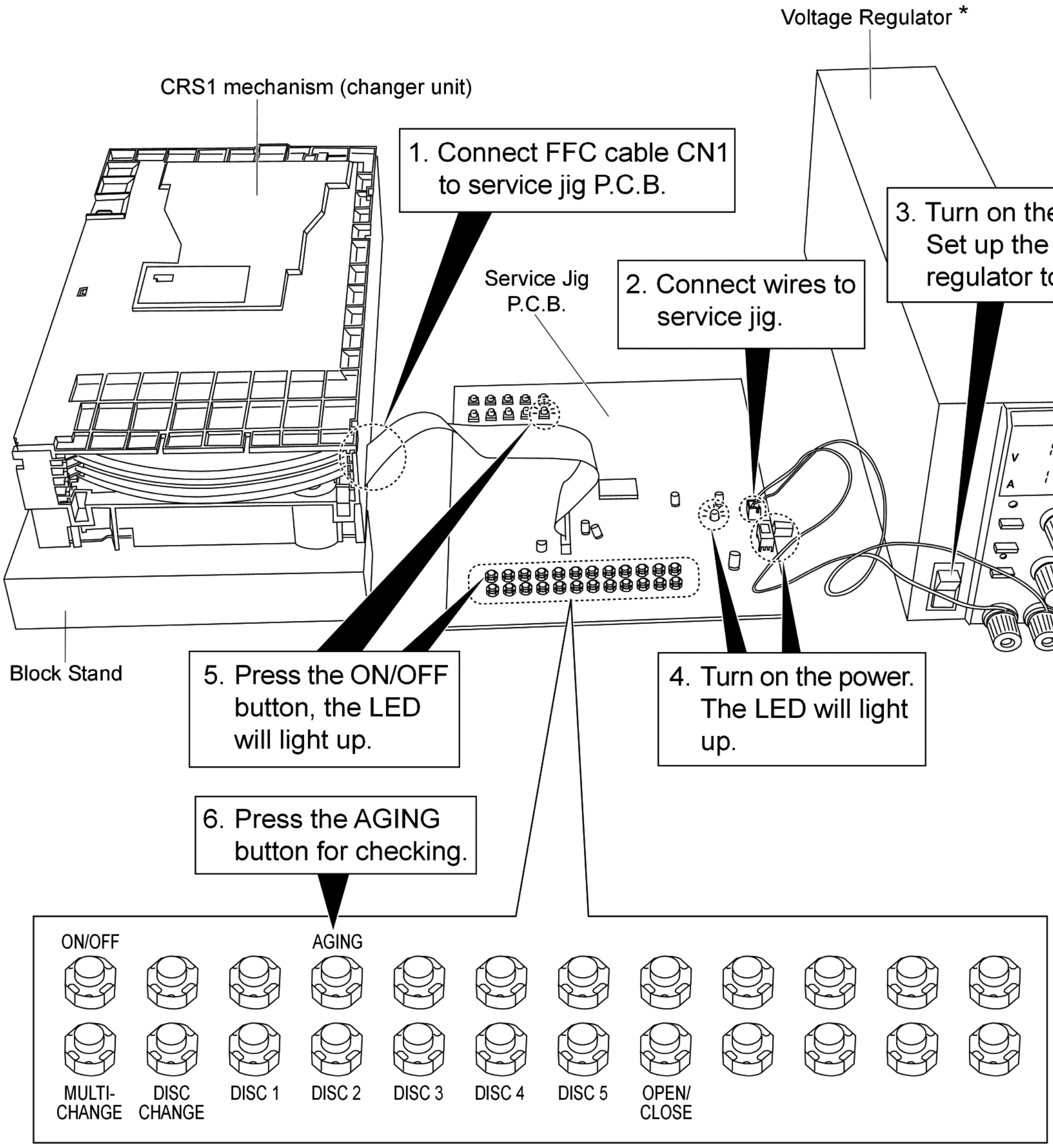
8 CRS1 (Changer Unit) Ageing / Reliability

Purpose: It is necessary to test the mechanism unit by using the Service Jig P.C.B., make sure it works in order before install it to the main unit.

8.1. Equipments

Equipments required for the set up preparation

- Voltage regulator*
- Service jig P.C.B. (RFKZ0331) [M]


Voltage Regulator *
CRS1 mechanism (changer unit)
Service Jig P.C.B.
Block Stand
V
A
10.0
18.8
ON/OFF
AGING
MULTI-CHANGE
DISC CHANGE
DISC 1
DISC 2
DISC 3
DISC 4
DISC 5
OPEN/CLOSE

1. Connect FFC cable CN1 to service jig P.C.B.
2. Connect wires to service jig.
3. Turn on the power. Set up the voltage regulator to 10 V.
4. Turn on the power. The LED will light up.
5. Press the ON/OFF button, the LED will light up.
6. Press the AGING button for checking.

* Non-supply

9 Notes of Schematic Diagram

(All schematic diagrams may be modified at any time with the development of new technology)

Note :

SW1	Open switch
SW2	Stock switch
SW3	Home switch
SW4	Top switch
SW5	Play switch

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
- **Importance safety notice :**

  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer´s specified parts shown in the parts list.

Caution !

IC, LSI and VLSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

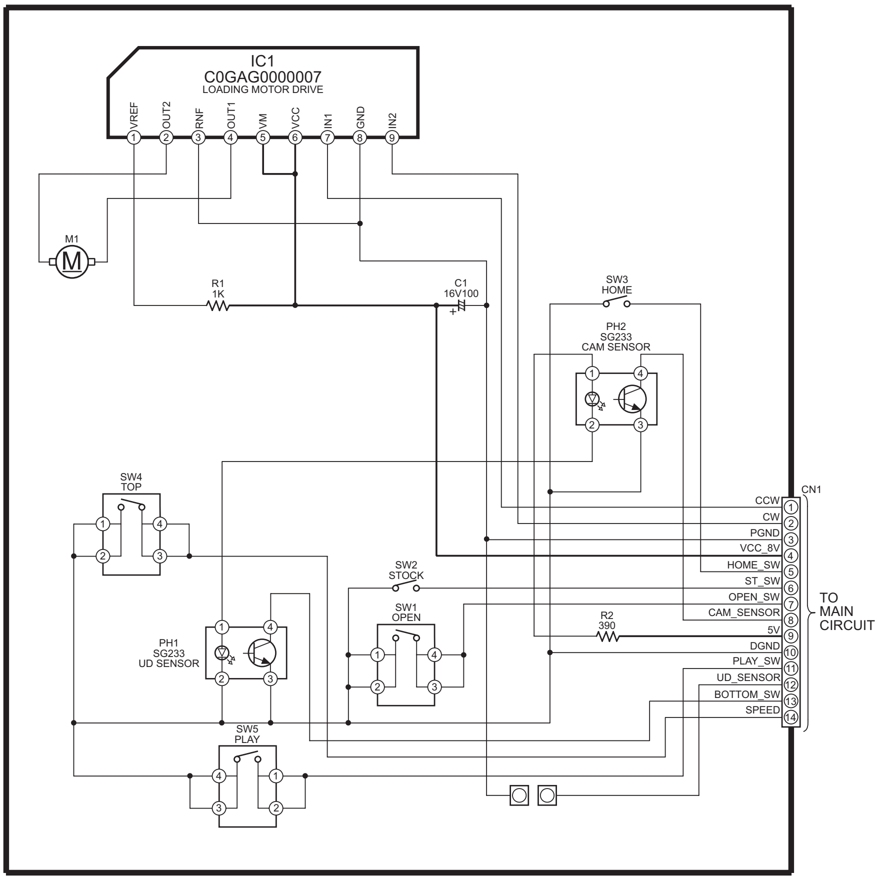
- Cover the parts boxes made of plastics with aluminium foil.
- Put a conductive mat on the work table.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.

10 Schematic Diagram

10.1. CD Loading Circuit

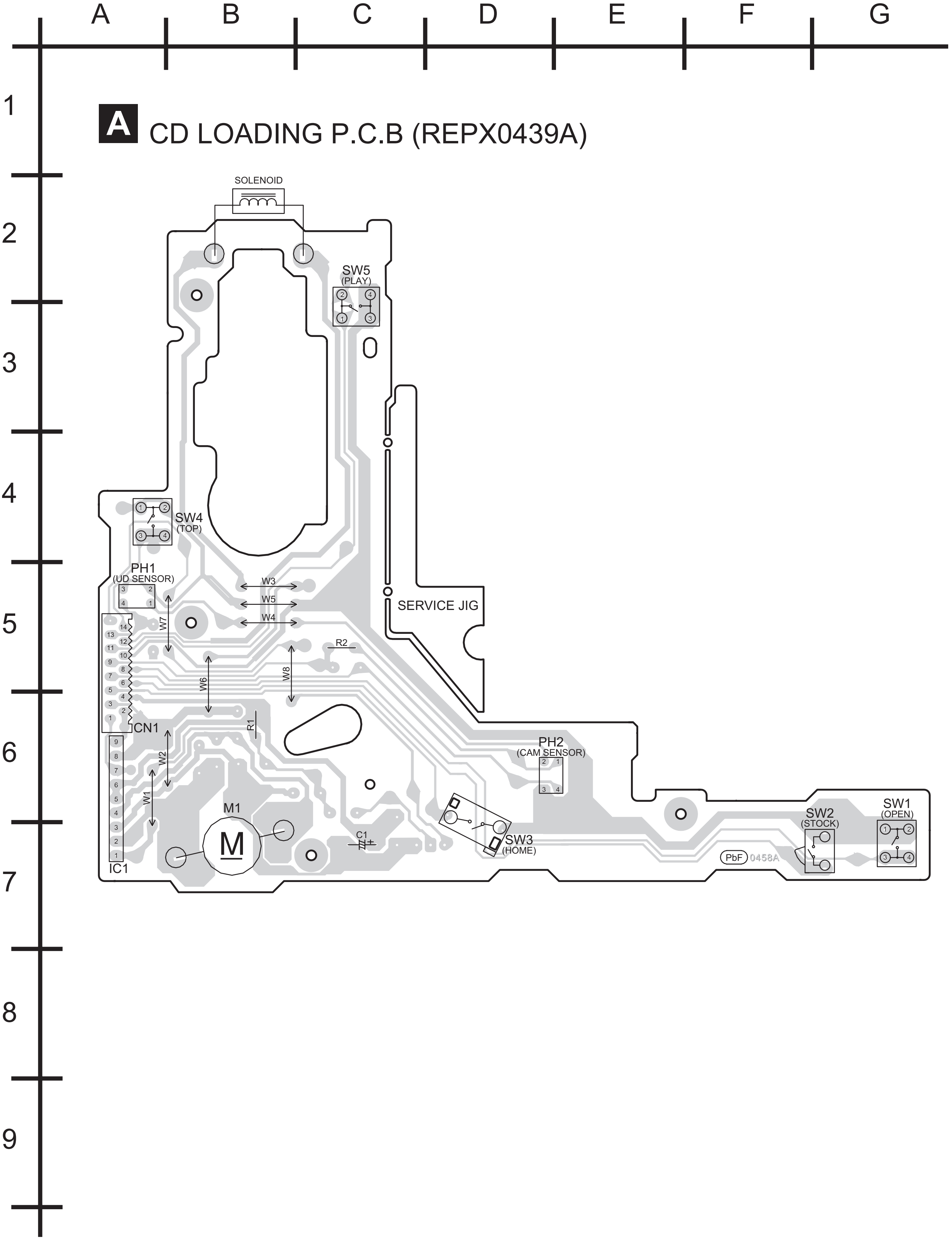
SCHEMATIC DIAGRAM - 1

CD LOADING CIRCUIT ——— : +B SIGNAL LINE


IC1
C0GAG0000007
LOADING MOTOR DRIVE
VREF
OUT2
RNF
OUT1
VM
VCC
IN1
GND
IN2
M1
M
R1
1K
C1
16V100
SW3
HOME
PH2
SG233
CAM SENSOR
SW4
TOP
SW2
STOCK
SW1
OPEN
R2
390
PH1
SG233
UD SENSOR
SW5
PLAY
CN1
CCW
CW
PGND
VCC_8V
HOME_SW
ST_SW
OPEN_SW
CAM_SENSOR
5V
DGND
PLAY_SW
UD_SENSOR
BOTTOM_SW
SPEED
TO
MAIN
CIRCUIT

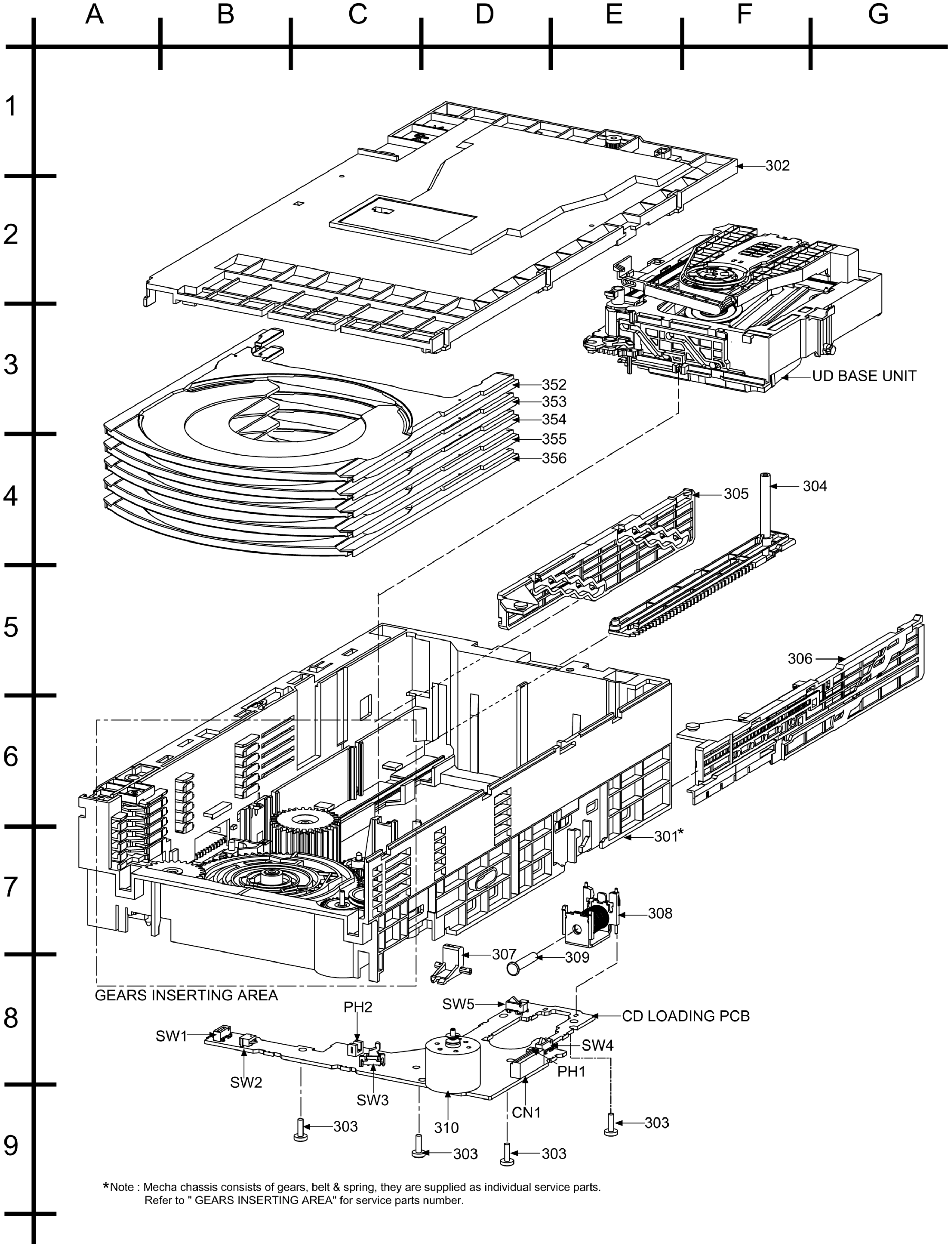
11 Printed Circuit Board

11.1. CD Loading P.C.B.

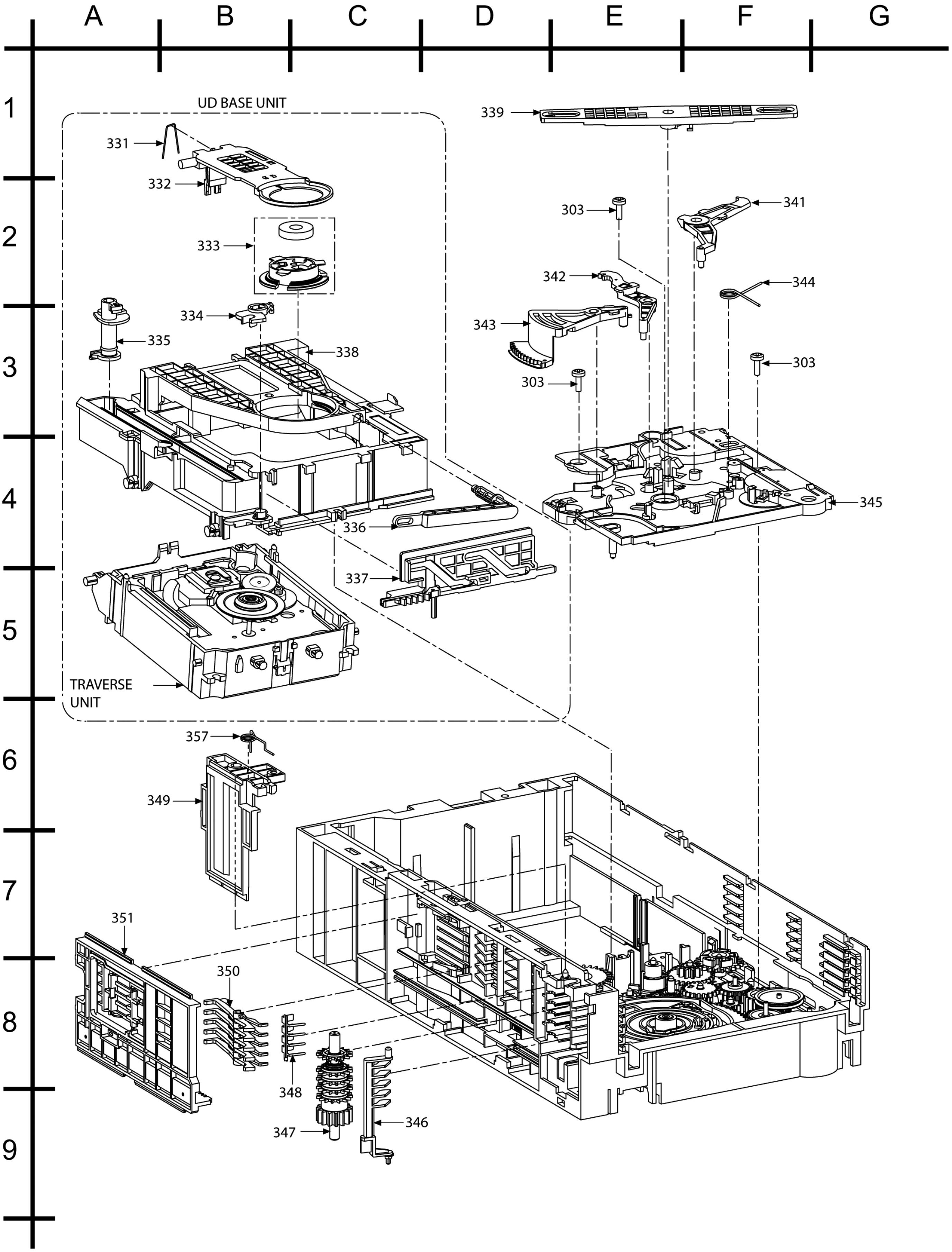

A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
A
CD LOADING P.C.B (REPX0439A)
SOLENOID
SW5
(PLAY)
SW4
(TOP)
PH1
(UD SENSOR)
W3
W5
W4
W7
SERVICE JIG
R2
W6
W8
CN1
R1
W2
W1
PH2
(CAM SENSOR)
M1
M
C1
SW3
(HOME)
SW2
(STOCK)
SW1
(OPEN)
PbF
0458A
IC1

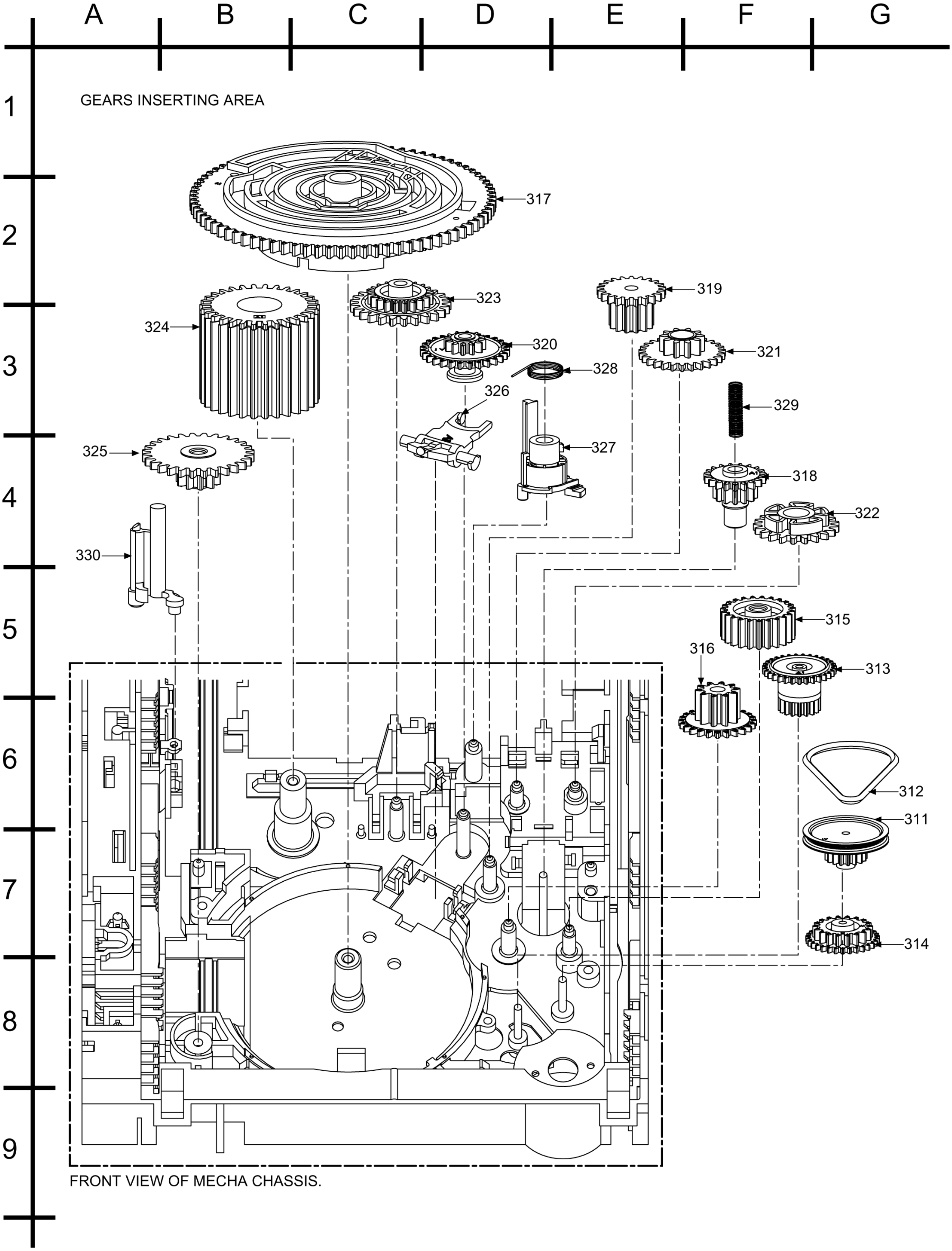
12 Exploded Views

12.1. CD Loading Mechanism


A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
302
UD BASE UNIT
352
353
354
355
356
305
304
306
301*
308
307
309
GEARS INSERTING AREA
PH2
SW5
CD LOADING PCB
SW1
SW4
PH1
SW2
SW3
CN1
303
310
303
303
303
303

*Note : Mecha chassis consists of gears, belt & spring, they are supplied as individual service parts.
Refer to " GEARS INSERTING AREA" for service parts number.


A
B
C
D
E
F
G
UD BASE UNIT
TRAVERSE UNIT


A
B
C
D
E
F
G
GEARS INSERTING AREA
FRONT VIEW OF MECHA CHASSIS.

13 Replacement Parts List

Notes:

- Important safety notice:

  Components identified by ⚠ mark have special characteristics important for safety.

  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

  When replacing any of these components, be sure to use only manufacturers's specified parts shown in the parts list.
- Capacitor values are in microfarad (μF) unless specified otherwise, P=Pico-farads(pF); Farads.
- Resistance values are in ohms, unless specified otherwise, 1K=1,000(ohms).
- The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
- [M] Indicates in the Remarks columns indicates parts that are supplied by **PAVCSG**.

13.1. CD Loading Mechanism Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK	
301	RFKJAA340PS	MECHA CHASSIS ASS'Y	[M]
302	RMLX0029	TOP COVER	[M]
303	XTB3+8JFJ	SCREW	[M]
304	RMMX0008	TRAY DRIVE RACK	[M]
305	RMMX0009	UD RACK L	[M]
306	RMMX0010-1	UD RACK R	[M]
307	RMLX0027	PLUNGER LEVER	[M]
308	RMS0398-1	MOVING CORE	[M]
309	RAQX0001-V	PLUNGER ASS'Y	[M]
310	REMX0001	MOTOR UNIT	[M]
311	RDGX0017	PULLEY GEAR	[M]
312	RDVX0001	BELT	[M]
313	RDGX0018	RELAY GEAR 1	[M]
314	RDGX0019	RELAY GEAR 2	[M]
315	RDGX0038	RELAY GEAR 3	[M]
316	RDGX0037	MAIN DRIVE GEAR	[M]
317	RDGX0022	CAM GEAR	[M]
318	RDGX0023	SWITCHING GEAR	[M]
319	RDGX0024	LONG GEAR	[M]
320	RDGX0025	FUNCTION GEAR	[M]
321	RDGX0026	UD GEAR 1	[M]
322	RDGX0027	UD GEAR 2	[M]
323	RDGX0028	PLAY GEAR 1	[M]
324	RDGX0029	PLAY GEAR 2	[M]
325	RDGX0031-1	TRAY RELAY GEAR	[M]
326	RMLX0024	FUNCTION LEVER	[M]
327	RMLX0033	PLAY SWITCH LEVER	[M]
328	RMBX0044	PLAY LEVER SPRING	[M]
329	RMBX0040	CHANGE GEAR SPRING	[M]
330	RMLX0032	PLAY LEVER B	[M]
331	RMBX0041	CLAMPER SUPPORT PLAT	[M]
332	RMMX0011	CLAMPER SUPPORT PLAT	[M]
333	RXQX0021	CLAMPER UNIT	[M]
334	RMLX0031	PLAY LEVER A	[M]
335	RMLX0025	TRAY CATCH LEVER	[M]
336	RMLX0034	TRAY REAR STOPPER	[M]
337	RMMX0007-1	TRV SLIDE PLATE	[M]
338	RMRX0057-1	UD BASE	[M]
339	RMLX0028	UD CONNECTION LEVER	[M]
341	RMLX0036	LOCK LEVER 2	[M]
342	RMLX0035	LOCK LEVER 1	[M]
343	RDGX0030	TRIGGER GEAR	[M]
344	RMBX0043	LIMIT SPRING	[M]
345	RMQX0132-1	PITCH PLATE	[M]
346	RMLX0026	OPEN SW LEVER	[M]
347	RXQX0019	OC GEAR UNIT	[M]
348	RMCX0031	OC GEAR SPRING	[M]
349	RMQX0133-1	GEAR COVER	[M]
350	RMLX0030	TRAY LOCK LEVER	[M]
351	RMMX0006	TRIGGER SLIDE PLATE	[M]
352	RMRX0056A-1	TRAY 1	[M]
353	RMRX0056B-1	TRAY 2	[M]
354	RMRX0056C-1	TRAY 3	[M]
355	RMRX0056D-1	TRAY 4	[M]
356	RMRX0056E-1	TRAY 5	[M]
357	RMEX0042	OPEN LEVER SPRING	[M]

13.2. Electrical Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PRINTED CIRCUIT BOARD	
	REPX0439A	CD LOADING P.C.B.	[M] (RTL)
		INTEGRATED CIRCUITS	
IC1	C0GAG0000007	IC DRIVER	[M]
		SWITCHES	
SW1	RSH1A045-1A	SW OPEN	[M]
SW2	K0L1BA000117	SW STOCK	[M]
SW3	K0L1BA000086	SW HOME	[M]
SW4	K0L1BA000078	SW TOP	[M]
SW5	K0L1BA000078	SW PLAY	[M]
		CONNECTORS	
CN1	K1MN14A00049	14P FFC CONNECTOR	[M]
PH1	B3NAA0000004	PHOTOSENSOR	[M]
PH2	B3NAA0000004	PHOTOSENSOR	[M]
		RESISTORS	
R1	D0AE102JA048	1K 1/4W	[M]
R2	D0AE101JA048	100 1/4W	[M]
		CAPACITORS	
C1	ECEA1CKA101B	100 16V	[M]